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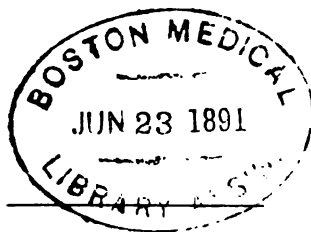
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THE
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A
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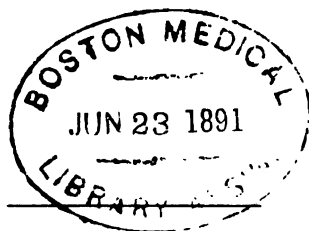
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JANUARY TO DECEMBER, 1889.

LONDON :
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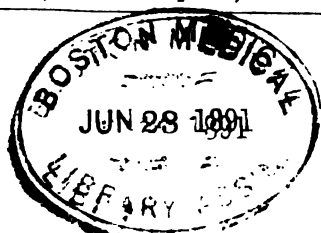
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SPECIAL NOTICE.—All communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.



THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

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The New Year.

IT is an amiable weakness of ordinary young people to indulge in all sorts of pleasant hopes and anticipations at the beginning of a new year. Youth is the time for building castles in the air, and, whatever comes of it, the building process is always rather a pleasing one. These somewhat trite reflections are the prelude to a little indulgence of the sort—perhaps a *chateau en Espagne* perhaps a prophecy—on the part of the JOURNAL OF THE BRITISH DENTAL ASSOCIATION. We have all the excuse of youth for being sanguine, for, as a body, we are not yet ten years old. During that time our growth has been steady and as satisfactory as could be hoped; the various executive bodies in all parts of the United Kingdom have worked without ceasing to attain the common ends for which we came into existence, namely, the promotion of the interests of the dental profession, the advancement of dental science

and the maintenance of the spirit and provisions of the Dentists Act. These executive bodies have enjoyed the benefit of very free criticism from all quarters, both from members and outsiders, and from each other, with the result that the Association is progressing slowly and surely and, although anything but perfect, is in a far more satisfactory condition than any one could have anticipated nine years ago. The question before us now is, however, rather what the coming year has in store for us than what previous years have bestowed upon us.

The present number contains at another page a Minor Notice which is in itself a good omen for the future in a matter of first-class importance, namely, the relations which are rapidly being established between dentistry and the parent profession of medicine. When dental matters are discussed in the spirit of these leaders in the principal representative medical and surgical journals of the day, we may certainly conclude that the position of the dental surgeon is rapidly becoming assured, and that the diploma of licentiate in dental surgery is respected as it should be; and if here and there a licentiate discovers that he is not being treated with the deference to which his diploma entitles him, let him consider that either he is a rare and unfortunate exception, or that possibly other circumstances unconnected with the question of diplomas may offer a truer explanation.

Although the Journal is larger and its circulation still increasing, yet at the same time we must not close our eyes to possible difficulties that may arise in connection with the unavoidable increase of matter. Meetings are more numerous and must be reported, for this is plainly the principal business of the Journal of the Association. This leads to the crowding out of other matter, and the Publishing Committee are often compelled, to their great regret, to

condense, hold over, or even omit altogether matter which, although highly interesting, does not possess so direct a claim to be inserted as the actual Association business. To a certain extent this difficulty may be met by the addition from time to time of an extra sheet (16 pp.), but this means extra postage in addition to the extra printing expenses, while there is no increase in subscriptions to balance against the outlay; and although matter may be over plentiful at one time it is difficult to be sure of its continuance in perpetuity. Whatever the solution of the financial problem may be, it will require careful consideration.

The most important event of the year, the Annual Meeting in August, will be held, as everyone knows, at Brighton; and whatever its success, we earnestly trust we may achieve it without working anybody to death. It is early to discuss the special features and attractions of the meeting; we must reserve that for future numbers of the Journal, and content ourselves now with saying that it will not fall short of its predecessors in the enthusiasm of those who are working it.

Another event of great importance which appears to be looming in the near future is the formation of a new branch—a Northern Counties Branch. It has been felt, no doubt, that the Midland Branch was too huge and threatened to become unwieldy; moreover, there is no doubt that the creation of a new branch brings into prominence a new set of workers in the necessary officers appointed; lastly, we may take it for granted that a good many small branches are better in some respects than a few large ones.

On the all-important question of the balance-sheet we must not venture to say anything at present, but taking all things into consideration, we may enter upon the new year with feelings of confidence and hope.

ASSOCIATION INTELLIGENCE.

West of Scotland Branch.

THE usual monthly meeting was held in the Library of the Faculty of Physicians and Surgeons on Thursday, 27th December, at 8 p.m. JAMES CUMMING, L.D.S.Glas., president in the chair.

After the usual preliminary business, Mr. JOHN STIRLING, L.S.D.Eng., Ayr, read the following communication :

The introduction of oxychloride and oxyphosphate of zinc stoppings, especially the latter, has been a great acquisition to us. Their close adaptation—and indeed adhesion—to the walls of a cavity, and their comparative immunity to thermal changes, make them very valuable material for arresting decay. By their use we are enabled to save the pulps of teeth which in certain circumstances would be seriously irritated or killed. Even where there is a minute exposure of the pulp I sometimes, and successfully, fill with oxyphosphate, using first a small piece of cork paper as a capping. Though as a rule I advocate destroying every exposed pulp, it is occasionally more convenient to cap, and there are sometimes other reasons why a pulp should not be destroyed, as that there has been no pain, and that the dentine round the pulp is not very soft.

I use oxyphosphate in many cases for lining a cavity, not only where a nerve has been nearly exposed, but in young or soft teeth even where there is still a considerable thickness of dentine over the nerve after the cavity is prepared. Except in good hard teeth I advocate lining all deep cavities. Stoppings are more comfortable and give less chance of causing any irritation to the nerve which sometimes leads to the formation of pulp stones or to actual death. In places where oxyphosphate stoppings are subject to abrasion, I usually, some time after their insertion, remove the upper half or two-thirds of the stopping and substitute amalgam or gold. In places where they are subject to erosion, such as interstitial cavities reaching to the gum, I begin by putting amalgam at the cervical wall and fill up with oxyphosphate.

Oxyphosphate and oxychloride stoppings have usually been considered as only temporary, but I think oxyphosphate may be considered as permanent in crown cavities where there is no abrasion, and in buccal and interstitial cavities where amalgam is

placed in that part of the cavity which is contiguous to the gum. The oxychloride has the disadvantage of being rather more soluble in the mouth, and causes pain on application to the tooth. I gave up using it as a stopping some years ago, but for filling nerve canals I know of nothing better than a very slow setting oxychloride.

Gutta percha, I suppose, we regard more as a temporary stopping; at the best it cannot make a perfect stopping, but it is useful in some cases where there is no abrasion, such as a large cavity where oxyphosphate would be affected by the secretions from the gum and it is not advisable to use amalgam, or where for some reason we cannot have the cavity properly shaped or the decay thoroughly removed. It may be said: Why stop a tooth at all, if we are not to do it thoroughly and properly? But I saw a short time ago a gutta percha stopping still doing good service, which was put in over three years previously under the following conditions:—A valuable upper molar which supports a case of artificial teeth, was being lost by decay in a distal cavity; the patient, a lady in delicate health, declared she would rather lose the tooth than have it stopped. I simply cleared out a little food, dried the cavity, warmed a piece of gutta percha and pressed it in. I am sure that any other kind of stopping, so put in, would have dropped out long ago.

Gutta percha as a lining I have found to be unsatisfactory; something more resistant and inflexible is required.

Amalgam, although not the best, is perhaps the most useful stopping we have. It is simple and easy of manipulation, but to make a good amalgam stopping requires some skill and experience. From the old method of making a very plastic mass and putting it in the cavity in one piece like a piece of putty, we went to the other extreme and made it not plastic enough, and packed it in small pieces. Both of these methods are wrong; the first piece inserted should be plastic enough to be easily pressed into every crevice and corner, and the remaining pieces should have very little mercury and be pressed in with considerable force.

The old copper amalgam, known as Sullivan's cement from its paste-like consistency, has the advantage that it goes easily into every crevice in the cavity, but it is not to be commended, especially as other amalgams are now so much improved.

Stoppings containing cadmium or zinc have been much decried, and justly so. There is a feeling of easy and smooth working

when using them—aptly described as a buttery feel—and they look bright ; but in time they stain the tooth a blue-black colour and do not retain for long a close edge. I am inclined to think, however, that the infamous character of these stoppings has been caused by their usually having too much cadmium or zinc, and perhaps too little silver. If the oxide of tin or of silver help to arrest decay, then even a little cadmium or zinc might neutralise that ; but, however that may be, I have for some time been using for stoppings near the front of the mouth an amalgam with a little zinc in it which is, as far as I have seen, in no way detrimental to it and it improves the colour.

Of course, it must not be forgotten that no metal clasp or plate can be allowed to come in contact with a stopping which contains zinc, platina, or cadmium, on account of the electric shock which it causes.

The best composition of an amalgam would be sooner found and made known if all dentists were to make their own and keep a record of their experience of them, instead of using amalgams the composition of which they do not know. I use only amalgams made by myself and have lately begun to keep a record of those inserted in the mouth which I am likely to see again, and I put occasionally two or three different amalgams in the same mouth. After all, a good amalgam alone will not make a good stopping, and if we stop teeth by gaslight we shall make bad stoppings without knowing it.

This was followed by a discussion in which all the members present took part.

Mr. J. R. BROWNLIE showed a model of a lower left molar, the buccal wall alone standing, which he had built up in amalgam by means of a tin and vulcanite matrix and a pin fixed in one of the roots. This was the only decayed tooth in the mouth.

The meeting closed with a vote of thanks to Messrs. Stirling and Brownlie.

The next meeting will be held on Thursday, January 24th, when Mr. Dall, Glasgow, will give a communication.

Southern Counties Branch.

THE first meeting of the Executive Committee for the Annual Meeting of the Association was held at Brighton, on December 29th last.

Messrs. J. Smith Turner, Morton Smale, F. Canton, Walter Coffin, Cornelius-Wheeler, Alderman Rymer, J. Dennant, J. H. Redman, E. M. Tod, Walter Harrison, W. R. Wood, jun., J. H. Whatford, and Morgan Hughes were present.

Mr. Cornelius-Wheeler took the chair. After Mr. J. H. Redman, 61, Old Steine, Brighton, had been appointed Hon. Secretary of the Executive Committee, a lengthy discussion took place as to the best mode of securing the use of the Pavilion for the meeting. The question of sub-committees was then broached, but their appointment, with the exception of a Museum Committee, was deferred to a later date. It was decided that the museum should this year be limited to the illustration of two or three subjects, and a small committee was formed with power to add to their number. The names are as follows:—Messrs. Underwood, Tomes, Charters White, Hutchinson, Storer Bennett, Dennant, Harrison, Caush, Wood, Whatford, Welch and Tod. Various other questions were discussed in an informal manner, and the meeting was adjourned till March 2nd.

Irish Branch.

THE Annual General Meeting of the Irish Branch will take place in the Royal College of Surgeons, Ireland, on Saturday, January 26th, at four o'clock p.m. precisely, for the election of Officers and Council and other important business. The Council make the following recommendations: President, R. H. Moore, F.R.C.S.I.; Vice-President, J. C. Clarke, L.D.S.Eng.; Hon. Treasurer, A. F. Thomson; Hon. Sec., W. Booth-Pearsall, F.R.C.S.I.; they also recommend that seven members of Council be elected for Dublin, three members for Belfast, one for Cork, one for Londonderry, one for Limerick. Daniel Corbett, M.R.C.S., President of the British Dental Association, will deliver his valedictory address as President of the Irish Branch. Dr. Stack has given notice to move some urgently needed amendments of the Branch rules.

W. BOOTH-PEARSALL,

Hon. Sec. Irish Branch.

ORIGINAL COMMUNICATIONS.

Implantation of Teeth.

BY GEORGE CUNNINGHAM B.A., D.M.D., L.D.S.

(Continued from p. 826.)

CASE VII. was that of A. A., an apparently healthy young woman, aged twenty-one, who had lost the right upper first bicuspid about a year previously. The scion tooth was a large right upper second bicuspid extracted in the morning, 7th August, 1888, the day of the operation. It was not a very suitable tooth (1) from its being so much larger than the patient's own remaining bicuspid, and (2) from the pericementum shewing signs of very considerable inflammation towards the apex and all down one side. It was, however, the best of the few teeth available, and as the operation was performed as a demonstration in connection with a Post-graduate lecture at the National Dental Hospital, a certain degree of urgency may be admitted. From the largeness of the scion root, the artificial socket had to be made unusually large and the alveolus very considerably cut away, especially on the palatal aspect. The root canal was treated and filled as usual through a carious cavity in the crown, which was afterwards filled with gold. The tooth was kept moist during this process by the solution (H_2Cl_2 , 1 in 2000), in which it had been lying since its extraction, five hours previously. The large crown was cut down till it fitted tightly between the adjoining teeth and articulated with its antagonists.

Neither splint nor ligature seemed necessary. Mr. Lancaster, the then house surgeon, took charge of the case, on which he reports as follows: 9, vii. 88.—Patient has great pain, gum very much inflamed and surrounding tissue acutely sensitive to pressure. Tooth firm. Lin. Iodi applied to gums. 13, vii. 88.—Patient reports an increase of pain, which is now diminishing, since her last visit. Still much local inflammation and tenderness. Tooth loose. 14, vii. 88.—Pain still diminishing. Tooth ligated, unwaxed silk and mastic varnish application. When last seen the case was doing well.

CASE VIII. was that of F. W. W., a schoolmaster of rather weak physique, aged twenty-seven, who had had the right upper canine and first bicuspid extracted some eight years previously

for the relief of a crowded and irregular denture. The result of that needless operation was an unsightly gap, which marred the distinctness of his articulation. The scion tooth was extracted from the mouth of a healthy young girl, aged fifteen, for the relief of a crowded denture, on 15th August, 1888, and had been sent to me in a solution of mercuric chloride (about 1 in 3000). A large part of the root, involving the lower two-thirds of the labial surface, and extending to a considerable part of the distal and also slightly to the mesial surfaces, seemed entirely denuded of its pericemental membrane. During the preparation of the scion tooth, which was similar to that of the other cases, it was firmly held in a holder by the crown, thus obviating almost any manipulation of the pericementum. About 30 hours elapsed between the extraction and the insertion of the scion tooth. In the course of preparing the artificial socket, the floor of the antrum was perforated. The tooth fitted the socket so tightly that neither splint nor ligature was applied. On the third day after the operation the patient wrote to say that he was too unwell to keep his appointment for the following day. The pain commenced on the day following the operation, and was described as never having been so acute as to cause him much sleeplessness, but his "general feeling was one of complete inactivity and deplorable apathy." The tooth was already loose. On the fifth day after the operation the patient arrived with the firm intention of having the tooth removed. He referred the pain to the region of the antrum, and described it as being "dull and lasting rather than acute and intermittent." He had no pain in the implanted tooth.

On examination I found the tooth was extremely loose and all the neighbouring parts in an acutely sensitive condition from inflammation. The gum on the labial surface was covered by a layer of cast-off epithelium with one small ulcer a little higher up, while a slight swelling was noticeable opposite the root on the palatal surface. There was a distinct swelling of the cheek below the right eye which was red and watery. The cheek was slightly flushed and tender on pressure, especially towards the nose. The results of the following treatment are interesting both from its efficacy and from its relative novelty in dental cases. At 11.30 a.m. a hypodermic injection was made at the junction of the cheek and gum over the implanted tooth, of five minims of Dr. Hugueschmidt's antipyrin and cocaine hydrochlorate solution.

The relief was both immediate and complete, and continued for fully an hour, when the patient became anxious at a slight return of uncomfortableness. At 1 p.m. twenty grains of antipyrin dissolved in water were administered internally, at 2.15 p.m. a second dose of similar strength, and at 5.15 p.m. a third dose of half that amount. Warm fomentations were applied for about an hour (3.30-4.30 p.m.). Meanwhile the tooth was fixed in a metal band splint with phosphate cement, and the patient left happy, comfortable, and even quite lively. He has since reported that he has had absolutely no pain subsequent to his last visit, but that he is disappointed in the continued looseness of the scion tooth.

RATIONALE OF THE PROCESS OF REPAIR.

The amount of positive knowledge which serves to throw light upon the exact method by which implanted teeth are retained in their sockets is so very small that we must be careful to abstain from drawing any premature and dogmatic conclusions as to the process, or even processes of repair, for, since it has been ascertained that both "dead" and "live" teeth are retained in artificial sockets, the mode of retention need not necessarily be the same in both cases. An important factor in considering this question would undoubtedly be the persistent vitality of pericemental life; but, as already shown in discussing this theory of Dr. Younger's, it may be dismissed since it is not based upon satisfactory scientific data.

In support of my attitude on this question I am able to quote the important evidence of Professor Miller of Berlin, who, at the meeting of the American Dental Society of Europe in 1887, expressed himself as follows:—"Younger uses for the purposes of implanting, not unfrequently, teeth which have been for days, months, or even years out of the mouth, and believes that the pericementum of such teeth becomes revitalized, so to speak, when they are planted in living tissue. In this, I think, there can be no doubt that Younger is entirely in error. When a tooth has been out of the mouth so long that the pericementum has become completely dry, there can be little hope of restoring it to life again."

I think, then, we are justified in the conclusion that the pericementum, so far as vitality is concerned, has no special characteristics which differentiate it from any other connective tissue of

the body, and it is therefore extremely improbable if not quite impossible that it should possess this so-called property of inherent vitality.

As however Dr. Younger's theory is receiving some considerable acceptance in America, even, we are told, by some whose names are familiar as noted microscopists, it may not be out of place to call attention to the fact that a belief in this theory is not at all essential to an explanation of the undoubted fact that the dry teeth, as inserted in this operation of implantation, do become perfectly firm in the mouth and are retained there for a very considerable time.

Mitscherlich, in an excellent and exhaustive paper on the "Replantation and Transplantation of Teeth," published in Langenbeck's "Archiv. für Chirurgie," Vol. IV., translated into English in Truman's "Archives of Dentistry," Vol. I., p. 169, after describing the results of transplanting dead or rather dried teeth from the corpse into the living subject, records the results of some experiments on animals which satisfactorily explains the mode of retention of such teeth. He took an upper incisor from a dog's skull and, after extraction of a corresponding tooth, pressed the tooth extracted into its place, fixing it by means of a silver wire passed through a hole in the tooth and the alveolar process. After six weeks the dog was killed, having been given during the last few days three grains of picronitrate of potash three times a day; the carotids were immediately injected. The muscles, like the gums, were coloured yellow; neither, however, in the implanted tooth nor in the sound ones was any alteration in colour perceptible. After removal of the silver wire the tooth was quite firmly seated, and could not be moved in the least by the fingers. The gums, as in the remaining teeth, were accurately applied both to the alveolar process and also to the tooth itself, and nowhere could any alterations be found in it. On longitudinal section the tooth was found everywhere most intimately connected with the surrounding parts, and suppuration showed itself nowhere. None of the injection had been forced into the pulp cavity, which presented no trace of the pulp beyond a little detritus. Of the periosteum there were only in a few places some small remains discoverable. On the posterior surface of the tooth two small cavities were visible, the larger of which lay more towards the point of the fang and extended to the pulp cavity; they were filled with a soft substance and their walls appeared roundish. These appearances were en-

tirely confirmed by microscopical examination, inasmuch as only in a few places, especially on the anterior surface of the tooth, were traces of periosteum to be demonstrated; where this was absent the tooth was eaten away, and its absorption had proceeded in such a manner that a multitude of globular elements appeared on the section, resembling the fragments which we find in ivory pegs which have been bored into bones and retained in them a considerable time. In the two above-mentioned cavities the absorption had proceeded further and further, and had at last attained its above-mentioned extent. The cementum could still be demonstrated in certain places; it was, however, absorbed in the greatest part of its extent. In the cavities of the tooth substance, masses of bone were embedded; they were applied to the walls of the cavities without any kind of intermediate substance, and so held the tooth with such extraordinary firmness. This osseous deposit, which was directly connected with the alveolar processes, was freely traversed by blood vessels which sometimes extended themselves close up to the tooth substance. It was also so fully developed that the process had to be looked upon as fully accomplished, and therefore a later exfoliation of the tooth was not to be expected.

Certain experiments by Prof. Miller, though initiated for an entirely different purpose, serve to throw some light upon this very important subject. At the meeting of the American Dental Society of Europe before referred to, he remarks: "I have found by experiments on rabbits that the pieces of dead dentine may be retained and firmly held in living tissue by encapsulation. Small pieces brought under the skin or into the abdominal cavity *under aseptic* conditions soon became enclosed and firmly held in a dense capsule of connective tissue, and could not be removed without tearing the tissue. In all cases, however, resorption soon began forming irregular resorption-territories or cavities into which the tissue grew, thus forming another temporary bond of attachment between the dentine and the surrounding tissue. In one case, where the piece of dentine was left for 24 hours in putrid saliva, suppuration took place and the piece was thrown off.

"When pieces of dentine having living pericementum were used, an apparently permanent union with the surrounding tissue was formed, no resorption being evident after three months. I see no physiological reason why the implantation of teeth—where

the alveolar process has been sufficiently preserved to enable one to obtain a normally deep socket for the tooth—should not show nearly as large a percentage of successes as transplantation. The operation should always be performed under antiseptic conditions, and, as far as possible, freshly extracted teeth should be made use of.”—*Dental Record*, Nov. 1887.

In the *Oesterreichisch-Ungarische Vierteljahrsschrift für Zahnheilkunde*, Heft i., ii., iii., 1886, is an account of a long series of experiments made by Léon Fredel in replantation and transplantation of teeth in dogs. It appears from these experiments to be proved that the cavities of absorption only occur in teeth where they are unprotected by pericementum, and that the presence of pericementum is absolutely necessary for the formation of a firm and permanent union. It must be noted, however, that in these experiments the pericementum referred to is that of a freshly extracted tooth, and not one which has been “resuscitated” after a long sojourn out of the mouth.

The interesting and valuable experiments in replantation and transplantation of human teeth, made by Professor Stack, Dr. Baker, and Mr. Daniel Corbett, junr., are well worth careful study by those interested in the subject. The able paper* by Professor Stack clearly shows the real reason of failure in these operations, and further, the possibility of a reunion of the pulp with the tissues outside the tooth, a fact which may yet be of the utmost value in the operation of implantation.

These papers are of such scientific interest that I propose to refer further to them in a second paper, in which I intend to discuss experiments performed on animals with the special purpose of demonstrating the actual mode of union of implanted teeth.

The results of microscopical examination of human implanted teeth after removal furnish certain important, but not altogether satisfactory, data.

CASE I. ANDREW'S IMPLANTED TOOTH.—“At a special clinic of the First District Society (N.Y., U.S.A.) held on October 15th, 1886, Dr. W. J. Younger implanted an inferior central incisor in the mouth of Dr. C. L. Andrews. This tooth has since been under continued observation by the chairman of your committee. It became very firm soon after being inserted, and changed its colour

* Trans. of the Academy of Medicine in Ireland, 1883.

to conform to the other teeth, as they all do. It was a typical case of success and we have seen many experts deceived in picking out the implanted tooth. Dr. Andrews, a dentist himself, felt quite proud of the result, and everything pointed to a long-continued usefulness of the new member of his inferior maxilla. But about September, 1887, he first noticed that the tooth was getting a little loose. This he attributed to an injury received in eating corn, and ligated it and gave it every other attention; but it grew from bad to worse until, on February 21st, your chairman extracted the tooth and immediately placed it in a weak solution of chromic acid. It was at once taken to the laboratory of Professor Carl Heitzman, and left with him for microscopical examination for the benefit of the report of this committee. Professor Heitzman gave the specimen his careful attention, and returned to us four of the best sections, and india ink drawings of two of them ready for publication. His report of the specimens is as follows:

“NEW YORK, April 8th, 1888.

“The root of the implanted tooth which you brought for examination a few weeks ago appeared to the naked eye reduced to about one-third of its original size. This reduction was caused by deep erosions and irregular cavities that have replaced the original tooth tissues, viz., the cementum and the dentine.

“After the tooth had been softened in a chromic acid solution, the root was cut into thin slabs, and the appearances, under the microscope, were as follows: The dentine is corroded almost around the whole periphery of the root. Only in one place can a trace of cementum be seen. The bordering line of the dentine towards the excavations is fluted and made up of crescentic lines corresponding to bay-like excavations, which follow in varying sizes in large numbers. The dentinal canaliculi, in which the dentinal fibres are still recognisable, terminate abruptly along the concave borders of the bays. Here and there apparently closed spaces of varying sizes are seen at the eroded borders of the dentine. Both the small and large bays and the spaces are filled with a myxomatous granulation tissue, in which numerous partly wide capillary blood-vessels run, mostly filled with blood corpuscles. In places where the bays are shallow a delicate layer of fibrous connective tissue is seen attached to the dentine. The myxomatous tissue holds in many places globular masses of lime deposits; and in some places are seen débris of dentinal tissues, with irregular, eroded contours still holding dentinal canaliculi and obviously having escaped dissolution. Along one surface the bays appeared to be filled with coagulated serum of blood, in which blood-corpuscles and isolated medullary corpuscles were suspended; here evidently hæmorrhage

had taken place immediately before the removal of the tooth, that led to the destruction of the granulation tissue. The pulp chamber is lined mostly by primary dentine; a small portion, however, shows the formation of secondary dentine of the ordinary variety, with scanty and irregular canaliculi. Both the primary and secondary dentine border the pulp chamber with globular masses pierced by dentinal canaliculi, but showing nowhere excavations like those at the periphery of the root. Toward the apex of the root, where the corrosion of the dentine is most conspicuous, the pulp chamber has disappeared and the dentine is eaten away to such an extent that only thin ledges of it are seen. The process that has led to such an advanced destruction of the root is the same as that which brings about the absorption and destruction of the roots of temporary teeth before shedding.

(Signed) DR. C. HEITZMAN."

—*Chicago Dental Review*, June 15th, 1888.

CASE II. YOUNGER'S TOOTH.—So far as I can gather this tooth had never become firm and was therefore removed. The result of the examination was somewhat similar to the above case, and a full detailed report of the results of microscopical examination by Dr. Heitzmann and Dr. C. F. W. Bödeker will be found in the *Dental Cosmos* for May, 1888.

CASE III. B.'S (CURTIS) IMPLANTED TOOTH.—This case is deserving of more particular attention, as it throws some light upon what may be termed a really successful case of implantation, although it was only in the mouth nine months. In the absence of reproductions of my diagrams, I have been obliged to condense Dr. Curtis's own account as follows:—

"On October 12, 1886, I successfully implanted a superior second bicuspid in the jaw of Miss B., aged twenty-five years. The natural tooth had been lost seven years before this operation, and the tooth implanted was extracted two days previous to its use by me. On July 23, 1887, I extracted the implanted tooth. It had been in active service for nine months without the slightest inconvenience to the patient, and without manifesting any unfavourable symptoms. The tooth was so firmly embedded that it was necessary to break it off, and split the root and remove it in sections. An anæsthetic was used, as the operation was necessarily painful. The socket was then deepened and a larger tooth implanted.

"On a recent examination the tooth was found to be firm, the surrounding parts in normal condition, and the stranger restored to actual life and health. The patient has the same full use of this as of its predecessor.

"The extracted tooth, consisting of crown and upper two-thirds of root was at once placed in Müller's fluid (R. Potassic bichromate, $2\frac{1}{2}$ parts; sodic sulphate, 1 part; aqua, 100 parts). After remaining in the solution a sufficient time, the tooth was decalcified, sections prepared and a microscopical examination made.

"Fig. 1 shows section of middle third of root; (a) representing where lower third was broken off; (b) showing spot where cementum was destroyed before implantation, or after implantation, during process of repair. The dentine is found to be in a normal condition, the fibres are not shrunk, and the whole presents an appearance of a like section of a freshly extracted tooth. Toward the lower part of root the cementum is greatly thickened and has become converted into a dense fibrous connective tissue, partially calcified. At another part this fibrous connective tissue has become converted into true bone, connected directly with the dentine fibres. So intimate is this connection that it is impossible to say where bone begins and the fibres of dentine end. This formation of bone contains bone-corpuscles and Haversian canals; one of the latter is shown.

"Another section is from a different level, and shows limit of root where broken off. In this section is seen no fibrous connective tissue as in Fig. 1; all is converted into bone. At one part is shown a transverse section of a Haversian canal with its concentric lamellæ.

"Fig. 3 shows same field as Fig. 1, more highly magnified, bringing into prominence the bone corpuscles, and showing the Haversian canal, with its concentric lamellæ. . . .

"I may further say that, had the tooth subjected to experiment been unbroken, more points could have been proved. Had the tooth been whole, it could have been demonstrated whether the ossification extended to the entire length of the root. In my opinion it did. I believe that in this case the fixation of the tooth was caused by the reproduction of bone-tissue of the alveolus. The inflammation consequent to the formation of a socket produced an infiltration of osteoblasts or bone-corpuscles into cement-substance. The outcome of this process is bony ankylosis."—*Dental Cosmos*, May, 1888.

Professor Black, who examined the slides of Dr. Curtis' case, gave it as his opinion that what has been described above as bone is really a new layer of cementum. The original drawings from which my diagrams were made will be found in the two American dental journals just quoted.

In estimating the value of these three microscopical reports, it is important to bear in mind the condition of the scion tooth previous to implantation. In the first two cases no details have been given, but since both may be regarded as Dr. Younger's cases, and since we know his practice in such matters, we may conclude that they were both "dry teeth" which had been out of the mouth for some time. In Dr. Curtis' case, he informs us that the scion tooth was extracted two days previous to implantation. It is a pity that the further details as to this treatment in the interval, viz., as to the medium in which it was kept and as to the treatment of the pulp, have not been furnished. The interval during which the scion tooth was out of the mouth was sufficiently short to let us assume that it was a "live tooth," and thereby affording some explanation of the difference in results.

Even if, as is not improbable, certain cells in the area of inflammation take on absorptive action in every case, it does not necessarily follow that such action will advance rapidly or even continue slowly until the process is complete. Systemic nutritional power must be an important modifying factor. In favourable cases the "builders up" (osteo-blasts or cemento-blasts) may assume supremacy over the "breakers down" (osteo-clasts or odonto-clasts). If the recuperative power is feeble and the quality and quantity of the blood supply is poor, the absorptive process may run a rapid and destructive course. Systemic peculiarities and defective manipulation are no doubt the most important factors in inducing the final loss of the tooth by absorption of the root.

There can be no question, however, that no matter what the theories of Dr. Younger are, his success in practice commands our utmost respect for an operation whose introduction was hailed by the profession with a too general chorus of laughter and incredulity. A duration of little over two and a-half years in an operation like this is manifestly too short a period to enable us to come to a definite conclusion in the matter, especially when we remember that the process by which these teeth may fail in time—except, of course, those that have failed within the first few days or weeks—is usually a slow one. We fear that in the course of time a certain number of those temporary successes will, like their near relations, replanted teeth, fail by reason of the slow corroding effect of an absorbent organ. If our fears prove unfounded, so much the better for poor humanity.

TABULATED ABSTRACT OF CASES OF IMPLANTATION.

No.	Name.	Age.	Sex.	Tooth.	When lost.	Condition of Operating Field.	Operation.	Scion tooth.	Age.	When extracted.		Preparation of.
										Day.	Hour.	
1	R.A.K.	37	M.	R.U.I.	26. xi. 87.	Chronic abscess; gums much inflamed; dirty mouth.	Enlarged the socket to fit larger rooted scion tooth.	R.U.I. of his wife.	35	29. xi. 87.	10 a.m.	Root canal and cavity stopped while in the mouth on 26. xi. 87.
2	H.E.W.	26	M.	R.U.I.	22. xi. 87.	Inflammation subsiding from irritation of fractured tooth; lower part of alveolus gone.	Enlarged and widened socket in whole extent for reception of larger rooted scion tooth.	R.U.I.	35	29. xi. 87.	10 a.m.	Perios. protected by napkin, root canal filled out of mouth; napkin wet with Hg. Cl. ₂ (1 in 1000)
3	A.B.C.	23	M.	L.U.B. ₁	x. 84.	Gum healthy; absorption of alveolus complete.	Making artificial socket.	L.U.B. ₂	30	2. xii. 87.	1 p.m.	Root canal filled out of mouth as above; distal cavity A.; crown G. stopping.
4	W.H.W.	21	M.	L.U.B.	Several years	Ditto.	Ditto.	R.L.B. ₁	15	4. ii. 88.	12-30 p.m.	Root canal as above, ARs. in crown.
5	J.H.G.	39	M.	L.U.B. ₁	10 years (over)	Ditto.	Ditto.	L.U.B. ₁	15	4. ii. 88.	12.30 p.m.	Ditto
6	T.S.G.	21	M.	L.U.B. ₁	several years	Ditto.	Ditto.	R.L.B. ₂	21	7. iii. 88.	—	Root canal as above, 2 G sigs. in crown.
7	A.A.	21	F.	R.U.B. ₁	1 year	Ditto.	Ditto.	R.U.B. ₂ (large)	From man 26 years	7. vii. 88.	11 a.m.	Root canal and carious cavity filled with oxychloride and phos. cement out of the mouth.
8	F.W.W.	27	M.	R.U.B. ₁	R. U. C. & B. ₁ about 8 years ago	Ditto.	Ditto.	R.U.B. ₁	Girl aged 15	15. vii. 88.	—	Root canal and pulp cavity filled from the crown, Hg. Cl. ₂ % and G sig.

No.	Clinical observations	Hgs. Cl., I in 2000 Chloride Acid about 2° Hgs. Cl., I in 1000	Time	Treatment	Remarks
1	1 of root covered		6 hours	Metal splint phosphate co- ment, Ditto	7. vii. 88. 4. 88. 24. viii. 88. 10. x. 88.
2	Slight apical chronic inflammation; 1 of root covered.		3 hours	No splint nor ligature necessary	3. xii. 87.—Removed splint for alteration and re-fixing; gum congested; no pain except on pressure; tooth loose, but firmer than on implantation; no after treatment necessary
3	Healthy but only 1 covered.		6 hours	Metal splint phos. cement.	Owing to a curved root, the tooth fitted so tightly at one of the trials, thought it a pity to remove it again. 23. ii.—Tooth looser and slightly tender on pres- sure in eating. 2. iii.—Firmest again; no treatment; 19 days after the operation the tooth was found to be loose, but when seen again, one month after the operation, was quite firm and in a healthy condition.
4	Large part of root stripped of periosteum.		24 hours	No metal splint nor ligature.	Antiral perforation.—About a week or ten days after a swelling the molars, and later a fistulous opening over the L.U.M.g
5	Periosteum fairly com- plete on d., partially on l., and very little on m. surfaces.		1 1/2 hours	No splint nor ligature.	8. iii. 88.—Tooth firm and comfortable. 8. iii. 88.—Patient reported; tooth at first very firm, three days after bit rather hard on it; tooth remained loose for some time and then got firm again. About three weeks after again bit hard on it, tooth again loosened so that he thought it would come out. It then rapidly tightened and has remained so; does not notice any difference between it and his other teeth, it has not caused any pain, only incidental annoyance from looseness.*
6	Periosteum partially stripped off in diffi- cult extraction.		5 hours	No splint nor ligature necessary but was afterwards (14. vii.) ligatured.	9. vii.—Considerable pain and inflamed. 13. vii.—Less pain; tooth loose. 14. vii.—Pain disappearing; tooth tightened with silk varnished with mastic.
7	Periosteum intact; very much inflamed towards apex and especially on one side		30 hours (about).	No splint nor ligature necessary.	18. viii.—Tooth getting loose and considerable pain present, both conditions increased to maximum on 20th, eased with fomentation. 21. viii.—Patient in very bad state, came to have the tooth extracted; 11.30, extracted in V. of antipyrin cocaine solution, immediate relief; 1 p.m., 25 grs. antipyrin inter- nally; 2.15, 20 grs.; 5.15, 10 grs.; patient feels quite lively (fomentations continued for an hour 2 1/2, 4 1/2)
8	Large patch (lower 1/2 of labial surface ex- tending to the distal surface) seemed de- nuded of periosteum			21. viii. applied splint with IT Ah	x. 88. 88. †

It is evident that a satisfactory knowledge of the necessary conditions and the best lines on which to conduct the operation of implantation, can only be attained by detailed statistics of the experimental operations. The annexed Tabulated Abstract of Cases is an effort to fulfil that desideratum.

Meanwhile, we may, I think, safely adopt the following :

GENERAL CONCLUSIONS.

I.—That in the present state of uncertainty as to the rationale of the process of repair, experiments on animals are desirable since they afford the only means of ascertaining the actual relations of the artificial socket to the implanted tooth.

II.—That so far the operation of implantation is practically a success—and that, whether “dry” or “live” teeth are employed—though it is as yet premature to measure that success in years.

III.—That the operation is only capable of limited application ; but, in these special cases where it is applicable, the implanted tooth fulfils its function better than any other remedial treatment hitherto known in dentistry.

Impacted Wisdom Teeth, Illustrated by Notes and Cases in Practice.*

BY ALEX. KIRBY. L.D.S.Eng.

MR. PRESIDENT AND GENTLEMEN,—It was my original intention only to read a few notes on an interesting case of “Impacted wisdom teeth,” as a casual communication to our Society, but as I was invited to read rather a longer paper I have found it necessary to resort frequently to the knowledge and experience of others in its preparation.

When a wisdom tooth, after it is developed, is unable to be erupted either from its own malposition, the want of room in the maxilla, or any other cause, it is said to be impacted. Although fortunately not common, instances where impacted wisdom teeth cause grave local and constitutional mischief, occur sufficiently often to come under the notice of most of us in our private or hospital practice. One of the most frequent causes of this

* Read at the Annual Meeting of the Eastern Counties Branch, 27th June, 1888.

malady is the want of development of the jaw. After the second molar has been erupted, the maxilla sometimes ceases to make the posterior additions to its length which are required in succession as the first, second, and third molars are developed. When this happens, although the wisdom tooth may be developed in a perfectly normal position, it is erupted partly in the ramus of the jaw, so that a portion may be entirely covered by the dense bone of the ramus, part by the mucous membrane, and a corner or even half the crown of the tooth may be exposed normally.

Sometimes, in cases where there is no room for a wisdom tooth to come into proper position, it remains fully developed below the alveolar border. In other cases the tooth may be developed in a false position, pointing either forward, backward, to the inner, or to the outer alveolar border. The inclination may vary from an almost horizontal line to any angle between that and perpendicular.

There seems to be very great latitude for these teeth to be developed abnormally. You will remember that Sir John Tomes in his work quotes an instance of a lower dens sapientia being developed almost as high up the ramus as the sigmoid notch, and another case he records, that in the removal of a second upper molar the inverted crown of a completely developed wisdom tooth was brought away with it, being tightly embraced by the roots of the second molar. Of course, to go through a list of the various positions in which this tooth has been developed would require an indefinitely long time, and not be much to the point.

However much a tooth may be malplaced, it frequently gives no trouble at all, and of course, as long as it does not do so it is of little consequence to its possessor. Many of the specimens of malformed and malplaced wisdom teeth are derived from jaw bones in our museums and have evidently been no disadvantage to their owners. It is only when painful that they come under our notice except in pathological preparations.

One very frequent cause of severe pain and abscess is the pressing forward of a wisdom tooth on to the posterior surface of a second molar, and causing absorption of its substance often to the exposure of the pulp. In such a case the removal of the second molar effects the necessary cure, as the wisdom tooth then not having any obstruction comes into its proper place. The wisdom teeth of the inferior maxilla are more prone to give rise to trouble than those of the upper.

To pass on, the usual course of trouble from an impacted

wisdom is as follows. The patient at first notices stiffness and general uneasiness of the jaw and side of the face, which he attributes to cold. The stiffness gets more marked and the uneasiness amounts to pain, and there is swelling noticed outside the jaw. At this stage a poultice is frequently applied just where it should not be, namely, outside the jaw, the abscess which caused the swelling is made to point and either bursts or is opened. A quantity of pus is evacuated and the sinus continues to discharge and refuses to heal. Occasionally a sinus will heal, and another then opens not far from the first, often two or three will be discharging at one time. This state of things goes on for a longer or shorter time, but it is generally at this stage that a dentist is consulted.

On looking into the mouth, if we are fortunate to see our patient when he can open it sufficiently to make an examination, we shall of course notice if a wisdom tooth is absent, and a sharp probe seldom fails to discover its whereabouts. The striking of a steel instrument on to enamel has such a very characteristic feeling that one can scarcely mistake it. If any teeth, either second or first molar, interfere in any way with a clear view of the neighbourhood of the missing tooth it may be necessary to remove them. It is best to do this some time before the removal of the wisdom is attempted, as otherwise the bleeding from the second molar is an unfavourable element in its performance.

Care should be taken in the diagnosis to ascertain as nearly as possible, with a probe, the direction which a buried tooth occupies, as it is of great service when we come to remove it to have a good idea as to the direction in which our force should be applied. A pair of long, thin-bladed (but strong) forceps are frequently most useful, but the exact detail of instruments, &c., are things which only a man's own experience and fancy can decide. The subject has been strongly brought under my notice latterly, as I have had examples in both private and hospital practice within the past few months.

In the first case I am indebted to my patient for the accurate notes, dates, &c., of the history of his case before I saw him. He is an army surgeon of great method, and records everything in a diary. His age is 51. He says he first felt uneasiness in the left side of his jaw when living at Cardiff, in 1886. He consulted a surgeon in that town, who prescribed ung. aconite, but

did not give any diagnosis of the case. The trouble did not increase and his health kept good during the summer of 1886. When the weather became cold again in the autumn, he became unable to fully open his mouth and there was pain and stiffness. A dentist was consulted, who attributed the pain to possible exostosis of the second molar. After this he had severe pain and much swelling, and placed himself under a surgeon at Weston-super-Mare, who endeavoured to get the abscess to point in the mouth ; but it was unavailing, as it burst some time in December, 1886, externally, evacuating a great deal of very offensive pus. Only very temporary relief followed, and shortly after the whole side of the face was affected with an erysipelatous swelling. On the 17th January, 1887, Mr. Martin, surgeon, of Weston-super-Mare, assisted by Surgeon-major Fawcett, of the Army Medical Staff, opened, under chloroform, three abscesses, one nearly level with the eye. Immense relief followed this, and drainage tubes were introduced into the openings.

Mr. Dew, of Weston-super-Mare, extracted the second molar on the 29th January, 1887, but the condition of things remained unaltered. The two upper openings closed, but the lower ones remained discharging.

On June, 1887, he consulted Dr. Thomas Smith, of St. Bartholomew's, and Mr. Christopher Heath also saw him, and on the 11th of July he went into the Fitzroy Home Hospital, where Mr. Smith assisted Mr. Mills ; and Mr. Ewbank made an exploration under chloroform, but failed to discover the missing tooth which Mr. Smith felt certain was the cause of the trouble. This is the first mention of a correct diagnosis of the case. He soon recovered from the operation, but the sinus at the angle of the jaw still kept open and discharging.

In January of the present year I saw him in conjunction with my father and Dr. Goldsmith, and although he could scarcely open his mouth we were able after a time to discover a buried wisdom well back in the ascending ramus.

On February 9th, at the patient's house, I made an attempt to remove the tooth under ether, but from imperfect lighting of the room and inconvenience of bad chair, &c., I was unsuccessful. A first molar interfered very much with the view and also with the introduction of forceps, so I removed it.

On March 29th, at my own house, I again gave him ether, and having opened the mouth with Tuycon's screw gag, I was able to

remove the tooth, which was very much necrosed on its outer surface, the pulp cavity being open nearly the whole of its length. This prevented the forceps getting a hold across the crown of the tooth, and I removed it by applying them in an antero-posterior direction. Directly the tooth was removed the sinuses healed and in a fortnight my patient was perfectly well again. I have seen him within the last week and he has now full mobility in his jaw, and the only thing which remains besides the scars outside is a small depression where the tooth was removed, which at that time was not quite filled up.

A second case I saw at the Infirmary at Bedford in the early part of this year. The case had not advanced nearly so far as the last, but there was complete occlusion of the jaw and pain in the neck. Although there was much swelling no sinus was open on the face. I made an examination and found a buried wisdom, as I had expected, and with the assistance of the house surgeon, who administered ether, was able at once to remove the offender. An immediate recovery followed this case also.

A third case I may mention was an old-standing one, which was brought some years ago to my father. Sinuses had been open for several years in patient's neck and face, and, as a last resource, she was brought to see him. He removed under gas a wisdom tooth which had not been erupted, with the usual result of a most rapid recovery.

Dental Obligations.

BY F. J. VAN DER PANT, L.D.S.I.

IT is, I think, patent to us all that no agreement or compact can be properly carried out, in any walk of life, without the aid of certain well known and clearly defined rules, laws, courtesies, and customs. Some, no doubt, degenerate into mere platitudes and, in common parlance, are more honoured in the breach than the observance. Still, however that may be, they are always known to exist and, when occasion arises, can be fallen back upon, as a "Court of Appeal," to correct and remedy any grave departure from those laws which have always existed between man and man. I put it thus, in order to include every phase of the subject; but I propose, however, to confine myself to the above heading.

In the first place—What are the obligations due from the

dentist to his patients? And after I have endeavoured to answer that question, I will give a moment's thought to the opposite; but the first is clearly the most important.

The patient visits the dentist frequently in a condition of great mental and physical prostration, and is quite dependent on his skill and conscientious treatment as well as his kindest consideration; and it is surely not too much to add that these, at least, should always be found by every sufferer requiring dental aid, no matter what his or her position and means. If a practitioner's time is too valuable to devote to the treatment of a case that cannot remunerate him, it would be but just and proper not to undertake it at all and perforce not satisfy either himself or the patient, but rather to hand it over to some professional brother who may not have the same demands on his time although, perhaps, of equal skill, but who, having a reputation to make, would be satisfied with a fee of smaller proportions. It seems hard that a patient should suffer through the misfortune of restricted means, especially in the manner above described.

Again, lightness of touch is demanded almost equally with skill, A faulty tooth may be magnificently restored and become a monument of enduring fame to him who wrought it, and yet the ordeal to the patient be so terrible that no persuasion could induce to a repetition of it. In such a case well might be said "*Cui bono?*"

It is quite possible to forget that our masterpiece is not hewn out of stone or sculptured marble, but raised on a living, and often highly sensitive, organ, susceptible in the highest degree.

Sometimes, no doubt, we must be "cruel to be kind," and one may be quite as liable to err in lacking firmness through yielding to an excess of unreasoning fear and timidity, with the result of spoiling the patient and rendering any future operation still more difficult, as well as forfeiting our own self-respect. It needs almost a second curriculum, which, however, time and experience can alone teach us, viz., that the management of our patient may be commensurate with our skill in treatment of the numerous lesions that present themselves.

And when all this is done our obligation is not yet fulfilled. Many matters which may appear but trifles are gratefully accepted, and indeed ordinarily expected. Scrupulous regard to cleanliness, especially in our hands, and indeed all the surroundings should be quite innocent of any reminders of former operations; and it would be well to avoid any display of apparatus not absolutely

necessary for immediate use, but within easy reach in case of emergency.

Again, the utmost care should be exercised to avoid as far as possible any diminution of patience and self-control, no matter how sorely tried, as they must be every day in a large practice. This lesson will prove very salutary and in time cost scarcely an effort. The obstreperous patient may feel the silent rebuke of this calmness of demeanour and perhaps be tempted to follow our example; but at the least there will be the satisfaction of knowing that we have done our best, and this will reconcile us to many failures, and win for us respect if not regard.*

Secondly, let us not be afraid to require a fair and full equivalent for our labours, and as far as possible make our fees uniform. The American time system is doubtless the best and simplest and, were it generally adopted, would save us much loss of time and money. If patients knew that when an appointment were made, the failure to fulfil it did not cancel the obligation or fee, we should be less troubled by this source of annoyance which I fear is on the increase. In many instances little or no sense of obligation is felt by the patient, and for the slightest cause, and even from no fault at all, the dentist's fair fame is destroyed, and I regret to add capital is often made out of it by a rival practitioner, who, instead of loyally defending a brother, joins in the "hue and cry" against him, without any inquiry into facts which are as a rule the most trivial. I have myself heard an able and popular dentist blamed for simply exercising his own better judgment, and in trying to defend him have given offence—so strong is the bias of some patients, who, from social position and education, might be fairly expected to know better. A mutual feeling of respect should be shown by both parties.

So young, however, are we as a recognised profession, and so heavily have we been handicapped by the outsider and charlatan, that it is not surprising the public eye us somewhat suspiciously, and fail to accord us that measure of respect and confidence which are our due. Let each remember that every member of the dental profession can do something towards the great work of placing it on a firm and assured basis, by proving by his life and actions that he is indeed worthy of the confidence and respect of his patients.

On Cocaine.*

By W. A. HUNT, L.R.C.P.Lond., &c.

So long ago as 1853, Wackenroder and Johnson expressed their belief in the existence of a remarkable alkaloid in *cuca* leaves. Gadeke was the first to isolate it in 1860, and its physical characteristics and its property of numbing the tongue, &c., were described by Nieman, who named it *cocaine*. Later, Losson detected as an adulteration of the alkaloid a volatile base he called *hygrin*, but investigations this year by Dr. Paul throw a doubt upon the matter; certainly, the purer specimens lately manufactured have a far less strong odour than the early samples, which were amorphous, not crystalline, and instead of a pure white, a dirty white. I hand for your inspection a sample of Reynolds' and Branson's chemically pure; of this they have made but a small quantity, which they, I believe, regarded more as a curiosity than a commercial article, as the white crystallized form they send out they regard as practically pure to all intents and purposes; and I believe they, like the other English makers, purify the commercial salts, all of which emanate from South America. The *cuca* leaves yield a various quantity of the alkaloid—from $\frac{1}{8}$ to $\frac{1}{3}$ per cent.

Dr. Hughes Bennett, in 1873, further investigated the drug; also Sir R. Christison, and in 1877 to 1880, Von Anrep.

You may remember that Weston, the great walker, was noticed to chew certain leaves whilst doing his rounds—this turned out to be the *cuca* leaf; but to Köller, at the Ophthalmological Congress at Heidelberg is due the demonstration of its practical use. He exhibited its anæsthetic properties by installation into the eye in 1884.

In September, 1885, I experimented with the drug, using it, as I considered, in a more advantageous way, by forcing it by a syringe of narrow barrel hypodermically directly into the tissues. I wished to anæsthetize. My success was so marked in the first dozen cases I used it, that I published a detailed description of the method I used, and the results (this appeared in the January number of 1886 of the JOURNAL OF THE BRITISH DENTAL ASSOCIATION), and as I have had no occasion to alter my then statements, I may be allowed to quote from that paper, as dentists often ask me

* Read at the Western Branch Meeting, at Plymouth, July 27th, 1888.

many questions answered in that paper. Indeed, I have had many enquiring letters from different places, and letters of thanks from strangers at a distance, who have given me remarkable evidence of their appreciation of cocaine under the hands of dentists, who also are perfect strangers to me. The drug is now generally supplied in the form of hydrochlorate in glass tube bottles containing a grain each, according to my original suggestion.

Results vary with different operators ; possibly the impurity of many samples accounts for its varied action ; thus we have death following four six-grain doses injected into an ulcerated rectum in forty-five minutes, whilst another case is on record of twenty-two grains being taken by the mouth with but transient ill effect.

Hygrin, or whatever the impurity may be, seems of an irritating nature, and exists in the proportion of five to six per cent. in some samples.

This specimen of pure crystal I have mounted for microscopic examination ; it presents a beautiful play of colours under a beam of polarised light, I notice, which the specimen of impure amorphous H. Cocaine does not.

What, then, are the physiological properties of the best specimens we have hitherto been able to obtain ? I speak almost entirely of action by hypodermic injection, and here sum up the opinions of Mantegazza, of Milan ; Hughes Bennett, of Edinburgh ; Herman Biggs, of New York ; Mons. Laborde, of Paris ; Cunningham, of Cambridge, &c., &c., after elaborate investigations both upon cold and warm blooded animals, and upon man.

On the Heart.—In small doses it is a powerful stimulant. In medium doses it is first stimulant, then depressant. In large doses it arrests the heart's action in diastole.

On the Blood Vessels.—In small or large doses it produces, first, constriction of the vessels, with a rise of blood pressure succeeded by a considerable fall.

On the Nervous System.—Small doses increase the reflex irritability of the cord. Large doses reduce it considerably, and at the same time, whilst completely paralysing the sensory filaments, they but little diminish the irritability of the motor nerves—exactly the converse, therefore, of curare.

On the Respiration.—Moderate doses at first increase and then decrease the respiratory movements, while large doses paralyse respiration, and finally cause death ; but long *before* the heart's action ceases.

On the Temperature.—This is raised from $\frac{1}{2}$ to $1\frac{1}{2}$ °. The pupil invariably dilates.

On the Intestines.—They become pale with large doses ; peristaltic movements are increased in a wonderful manner ; this gives way, before many minutes, to repose.

On the Mental Condition.—Moderate doses produce an enlarging of the intellectual horizon and a general sense of well-being. In larger doses an indifference to surroundings, and an absence of fear even when the symptoms shown have given anxiety to the practitioner.

The local action of the drug, when properly used, is absolute anæsthesia over the whole area reached by the injection, and it is remarkable how sharply defined the boundary of this area is ; step over this line and you are at once in a territory where sensibility to pain is as keen as ever ; but what is very remarkable *within* the anæsthetic area, sensibility to touch seems little interfered with. Anæsthesia is usually complete in from three to ten minutes, and lasts several minutes.

I regard the mouth as the most difficult situation in the body for the use of cocaine; nevertheless, here it has answered admirably, and perhaps one proof of this is, that nearly always patients, having had it used once, ask again for it when the necessity arises. Like the late Frank Buckland, when about to undergo a surgical operation, he refused chloroform, saying that "he should prefer to be present at the operation," so many people like, as they say, to keep their senses, and know what is going on, provided they suffer *not*.

The symptoms I have noticed of an unfavourable nature, are in some cases great pallor of face, slightly gaspy respiration, nausea (which in my own experience has never been followed by sickness), weakness of pulse, sensation of pins and needles, cold clammy sweating, deafness on the same side as the injection. But these symptoms have been collected from a great number of cases, and moreover have all yielded either with the simple expiration of a little *time*, or with nothing more complicated in the way of treatment than 3i. of Sp. Ammon. Aromat. in water.

I may here relate a somewhat ludicrous example of the action of this drug on the mental condition. Mrs. —, a perfect stranger to me, called ; she was a woman of full size, and in good health so far as all appearances went. It was needful to relieve her neuralgic pain to extract an upper left molar and adjoining bicuspid.

As she was averse to the pain, I advised cocaine, and after waiting four or five minutes after the injection I extracted both teeth ; they were rather hard, but she seemed quite indifferent, avowed she felt no pain. I gave her an abundance of hot water, as is my habit in cases of neuralgia, to encourage bleeding and soothe the place ; but after all was finished and nothing was further to be done, she was so unwilling to leave the chair that I had ostentatiously to give her my arm, and request her to go into the waiting room, as I had other work to do, ringing for my man-servant at the same time to show her out as soon as she had put on her bonnet.

I went on with other work and forgot all about her, when one and a half hours after the man came to me, saying, Mrs. — was still waiting. I went to her ; I found she was there all right, but with no intention of leaving. I then discovered she came by train, and told her she must go at once to catch her train ; she bowed profoundly, but went not. I had at last to ring for my man-servant to show her the door. She saw at once that I meant she must go ; she again bowed profoundly as she passed through the door, turning and bowing again, and going down the gravel path she turned and bowed three times. Lastly she walked to the middle of the road, intently gazing at the front of my house, varying her gaze with a low obeisance, and during a more profound bow than ever my man closed the front door, whilst I went to a window to watch the performance. She remained five or ten minutes, gracefully bowing at intervals to the front of the house, and then slowly took her departure ; I, meanwhile, devoutly hoping no patient or friend would come by and perceive her performing thus. In a day or two her husband, a solicitor, wrote to me, saying how delighted his wife was at being “relieved of all her neuralgia by operation without pain,” and stating that although so grateful she was quite unable to remember whether she had paid me a fee. As a matter of fact she had not ; but it was received by return of post from her husband, with another grateful letter.

I have used cocaine most successfully for epithelioma of lip, for dissecting out large congenital warty growth from the parotid region, for putting in deep sutures in cut lip, for removing tarsal cysts, for removal of steel chip imbedded in the cornea, and for many other purposes in minor surgery, besides three or four hundred cases of tooth extraction.

I regard it as a most valuable drug in certain cases ; and judging from the enormous quantities *sold*—and may we not

reasonably argue *used*?—I cannot, in spite of alarming symptoms that occur sometimes, consider it a dangerous drug, as I have as yet met with no authenticated case of death due to its use in reasonable doses.

Yeovil.

Popular Education in Dental Matters.*

By J. C. OLIVER, L.D.S.Eng.

GENTLEMEN AND PROFESSIONAL BRETHREN,—Union is strength, division is weakness. Divided and unorganised, the dental profession has been in the past weak and ineffective compared with what it might have been, both in its destiny of usefulness to the world and in the furtherance of its own interests as a profession.

Now that we have become in a measure united and organised, I trust we already see an augury of largely extended usefulness and a growing *esprit de corps* among the members which will greatly enhance the interest of professional work to ourselves.

The subject on which for a few minutes I am about to address you, viz., “Popular Education in Dental Matters,” is one which I feel to be of supreme and growing importance both to the public and to ourselves. The education of the dentist is as regards the future an accomplished fact; the necessary counterpart to this is the education of the public.

Knowledge is power, and for the lack of knowledge how great calamities happen? and so for the lack of a common knowledge of the simplest facts relating to the teeth and their preservation, many millions of teeth of the people of this country are lost annually which might have been saved, and the suffering and misery resulting therefrom who can estimate.

The contrast to this national state of things is seen in the American people, among whom conservative dentistry is as much an article of faith as is Roman Catholicism to the people of Spain, and, perhaps, it is as much revered. Certainly the standard of education in dental matters there is infinitely beyond that of the mother country. Why and how this comes about is probably a question which may repay investigation, but the result of this

*Read at the Annual Meeting of the Western Counties Branch at Plymouth, July 27, 1888.

advancement is very marked, especially in the high standard which operative dentistry has attained among that enlightened people. There is a saying, "Like priest, like people," and so *vice versâ*, an enlightened and appreciative public demands and encourages high professional services.

As yet in England the cultured classes alone may be said to have a just appreciation of the value of their teeth, and are almost exclusively the patrons of conservative dentistry; the masses of the people, including a large proportion of the middle classes, are through ignorance and prejudice (oftentimes prejudice well founded) debarred from participating in its benefits. How inestimable would be the blessing which we should confer on the people of this country if, as an Association, we could popularise a national system of conservative dentistry which all classes might participate in. It appears to me altogether wrong that benefits that are necessary to the health and comfort of every one, should be selfishly the portion of the few.

As those who have made dentistry their life work and study, ours is the cultivation of this portion of life's vineyard, and it is for us to devolve means by which the whole and not a small portion only of our charge should come under cultivation. As a profession we are, doubtless, responsible for the light and leading necessary to benefit the public in all matters relating to the teeth. From our enlightenment and liberality should originate all needed reform.

Let us consider the example, then, of those worthy leaders, Tomes, Saunders, Cartwright, Turner, and others, whose persevering and self-denying labours have been successful in raising our profession from a state of almost degradation to its present honourable position, and let us in turn apply ourselves to the great work of educating the public in dental matters, first as our responsible duty, next as the surest means by which we in our several practices may build up and attach to ourselves a numerous and grateful *clientèle*. Individually nothing has conduced to my own success in practice more than the recognition of this responsibility to instruct as well as to labour.

In our desire to spread the blessings of conservative dentistry to all classes of the community, a necessary factor is the practical question of capacity to remunerate—the sinews of war must be forthcoming. We have State-paid schools, but we scarcely expect the State to pay the dentist. That even the labouring classes of

this country are well able to remunerate the dentist, is evidenced from the fact that individually many of them even now pay more for the supply of artificial substitutes than would have sufficed to preserve their natural teeth. Their ability to pay is not wanting, neither is their willingness, provided they can be convinced that they receive a *quid pro quo* and be persuaded that conservative dentistry does accomplish what it professes to do.

Without taking a pessimist view of the political outlook of our profession, I cannot but regard the future of dentistry as full of dangers to the legitimate practitioner. The Dentists Act, with all its benefits, has had the effect of rushing the profession with thousands of incompetent men who, but for this Act, would never have thought of entering practice on their own account. These men, many of whom are unscrupulous, trade upon the ignorance and credulity of the public, and by unblushing advertisements such as "A complete set of teeth for a guinea," beguile immense numbers of the people. The injury which these men are doing in all our large towns to honest and respectable practitioners in middle class practice is immense, and in many cases great hardship is occasioned. The only hope of curing this evil lies in an amendment of the Dental Act, making penal the practising in other names by unregistered practitioners, and by the respectable dentist devoting himself more whole-heartedly to the work of saving the natural teeth. The rising generation of dentists will be all skilled operators, and both by education and sympathy, conservative in their ideas, hence the future practice of our profession is destined to a largely extended movement in this direction. Those practitioners who recognize this and work in the same direction will go forward, whilst those who rest in a comfortable mechanical practice will find themselves outdone in an unequal struggle with these advertising and unscrupulous traders in artificial teeth.

Let the masses be taught to recognise conservative dentistry, and chalatanism will die out and the operative surgeon will never have to complain of lack of work. Fifty years ago the steam coal seams of South Wales were entirely unworked, the coal from its peculiar qualities having no commercial value; to-day it commands the highest price and constitutes the chief wealth of that district. The dental profession has before it in the professionally uncultivated people of this country a wide and rich field which, wisely worked, shall yield an abundant harvest to the rising generation of operative dental surgeons.

How, then, is this work of popularising conservative dentistry to be accomplished? I would suggest that an educational system be propounded which shall embrace all needed information and instruction. The *modus operandi* would be for the British Dental Association to form itself into a committee of the whole body, for the receiving of information and suggestions, and afterwards into a select committee as an executive. When a code of instructions has been drawn up and agreed upon, let them be issued in a printed form to every medical as well as every dental practitioner in the kingdom; these, again, would distribute them among their patients, or they might be hung up in waiting and consulting rooms, to be studied at leisure by those who wait.

Such rules might assume a tabulated form under different headings:—

1. Instruction to parents in the care of children's teeth.
2. Instructions to people generally.
3. Instruction to those who have lost their teeth.
4. Instruction to those who wear artificial teeth.

Now, each of these different classes of persons would rejoice to have some authority that they could accept as reliable and final. Moreover, it would save us as practitioners much exhaustive talk and materially strengthen our arguments, to have by us a well-arranged set of rules and regulations which we could place in the hands of our patients. The result would be further—that instead of there being a diversity of opinions on the same subject among dentists as now, there would then be brought about a consensus of opinion which would enable us, in a great measure, to speak the same thing, so that the conclusion arrived at by the public would naturally be that whatever *every dentist* says must be true, and would accept it accordingly.

One important result would attend an inquiry of this kind. The intercommunication of thoughts and opinions would do much to give form and force to the now mere latent ideas of the members of our profession, which, of itself, would do much toward the accomplishing of the object we have in view. Dentists themselves require educating and to have their convictions strengthened as to the value, and I might say sacredness, of these natural organs with which mankind is blessed. Our regard for them should be reverential, and in proportion to the force of these feelings in us will be the earnestness of our endeavours, and likewise our success in saving them. Half-hearted ideas or theories upon conservative dentistry are of little use to either the patient or the practitioner.

There must be first a strong conviction of its benefits based on an intelligent understanding of the whole question. The *practical* education follows, in the exercise of forethought, prudence and self-denial ; when this is accomplished, happy is the result both for the operator and for the subject. The lives of our patients are benefited in proportion as they rightly estimate the privileges of our healing art. *We* perform our highest mission as we encourage and help them in this pursuit.

On Malformations.*

By J. A. BIGGS.

MR. CHAIRMAN AND GENTLEMEN,—I beg to hand round for your inspection a peculiar case of malformation.

The specimen here shown is the third molar of a male, æt. 25, who had suffered as he supposed from neuralgia for over a year, and by the advice of his medical officer had in the course of that time consumed a considerable amount of quinine, from which of course he derived but little benefit ; he was sent to a dentist to have his teeth examined in case that an exposed nerve might be the cause of his suffering, but after a careful diagnosis nothing could be detected of an abnormal character, all his teeth being perfectly sound. This being reported to the medical officer, the former treatment was resumed, and of course with a like result. Ultimately he complained of a feeling of tension over this, the third molar tooth, and directed the doctor's attention to it, who could see nothing unusual about it but a slightly inflamed look about the gum.

The doctor advised that he should call on his dentist again, but as he did not happen to have a special dentist (his teeth being so good), I was favoured with a visit from him. I examined his mouth and found a considerable distension and inflammation in the parts surrounding the third molar, more particularly at its distal aspect. On probing this I found immediately below the surface a very hard substance which unmistakeably was enamel. I concluded there was another molar or supernumerary present, and advised the removal of the third molar, to which he consented. On removing it I found, as I thought, a supernumerary geminated

* Read at the West of Scotland Branch, October 24th, 1888.

on to it, but on applying a little force I found the attachment was only by the pericementum. The patient felt an intense and immediate relief, for which he was very grateful. No doubt you will have observed that it is a case of fusion only.

Mr. Chairman and Gentlemen, the next case of interest I beg to introduce to your notice is a malformed upper left central incisor. The patient, a female, æt. eleven, of good physique and health but with the defect of congenital cleft of the palate accompanied with hare lip.

The lip had been operated upon in infancy and with almost unusual success as nearly every trace of the cicatrix was obliterated. She was a bright intelligent little girl, and spoke wonderfully, considering the extent of the cleft, which extended from the pharyngeal wall right through the velum palatal bones, the left intermaxillary bone and alveolar border, and of course originally through lips and all. The teeth were all normal, but the upper central left was missing and had never been erupted. The day before she came into my hands her father discovered a hard white substance protruding from the edge of the nostril, and brought her to me for examination. On using a probe I found this to be the missing tooth, and as it was totally useless, unsightly, and caused a considerable discharge, I advised its removal. You may observe that the deposit of enamel has been very irregular in its development, that the dentine is very limited, that the short root presents a curious curve, and that the cementum is nearly all deposited on one spot, at its apex, and is so dense as to appear to be enamel. But the most curious thing of all is the fact that the tooth had not only lost its way to its position, but had actually revolved in its socket and also become inverted. It was somewhat difficult to extract as there was only a speck of it in sight; I scarified the nostril and pushed a pair of plain root forceps into its socket until I had a sufficient grasp of it when it came away without much force. Of course the operation was performed under the influence of nitrous-oxide gas.

The next case of interest I beg to present to you, is one of geminated temporary teeth. The patient, a female, æt. six and a-half years, was brought to me to have the upper right lateral removed as the permanent one, about to be erupted, was retarded by its presence. On removing it, I found a supernumerary tooth which was adjoining came away with it, and on examining it I found it geminated to it from apex to cutting edge of crown;

although diminutive, yet they are both well formed and each possess a separate pulp. In the mouth they presented the appearance of crowded but separate teeth, and of course the patient had the abnormal number of five incisors. The enamel, dentine, and cementum on both teeth are quite perfect. This is a very rare specimen indeed. I have never seen one like it, but I know that there is a similar specimen in the museum of the Dental College of Philadelphia.

Mr. Chairman and Gentlemen, the fourth case of interest I have the honour to bring before you on this occasion is the result of an accident ; the patient a child six and a-half months old when the accident happened. She had only erupted the four incisors, two lower and two upper. The mother of the child was sitting at table with the baby on her knee, when of a sudden she sprang forward and struck her mouth with great violence against the table. The blood flowed profusely, and the child shrieked. The mother was almost frantic and the whole household in a panic. The doctor was sent for and examined the child, and stated that the teeth were driven out, ordered a purge and said that as they were merely the milk teeth it would not ultimately matter, and that the wound would heal up in a few days ; but, by the following day the swelling assumed such an extensive and alarming appearance that her parents were uneasy and brought her to me. I introduced a probe into the wounds, and there found the two missing incisors.

The mother on being informed of this was very wrath with the doctor. I advised that chloroform should be given and the teeth extracted ; to this she readily consented, but would not hear of her own medical attendant administering the chloroform. Dr. Brodie of Albany Place was then called in and gave the chloroform, and I removed the teeth. Now the question was, would the germs of the permanent teeth be injured by this misfortune, or would they not. I confess I had grave doubts that they would. Some time has elapsed since then. She is now seven years old, sufficient to so far at least solve the problem.

I present a model of the case to you, Mr. Chairman, from which you will perceive the two successors are boldly asserting their presence. And I have now every reason to believe that they will assume a normal shape, size, and position, and become as useful and ornamental members as any of their fellows, despite the ordeal through which they have come.

Oblique Rooted Teeth.*

BY W. BOOTH PEARSALL, F.R.C.S.I.,

HON. SECRETARY IRISH BRANCH.

MR. PRESIDENT AND GENTLEMEN,—The abnormality I have the honour to bring under your notice to-night is one that has not attracted any attention in dental literature, for so far as my researches have gone in the works on dental surgery I have access to and have been able to consult, I have not found any reference to it either on account of the rarity of its occurrence or as adding another warning to the long list of complications connected with the familiar operation of extraction of teeth.

So far as my experience and observation have shown me I believe this abnormality is confined almost exclusively to the roots of the first upper molar teeth, and I have called the specimens before you oblique rooted teeth because the roots do not bear the same relative position to each other that we are accustomed to see in the normal type of molar, where the buccal roots are comparatively symmetrical as compared with the oblique form where the buccal roots are unsymmetrical. The normal may be formulated by this diagram •• the abnormal by this ••, showing a tendency to bring the roots into the same plane by some flattening process. If you will examine the specimens I now place before you, you will notice that the anterior buccal roots are rather larger in bulk and more in advance of the posterior in the diameter of the crown, running by a line in the direction from cheek to palate, and in eight out of twelve specimens the posterior root joins or fares with the palatine root, a shallow groove or depression on the inside and outside of the fused root being the only mark to show that these roots are usually apart.

If you examine the specimens further you will, I think, observe that the crowns of oblique rooted teeth do not present any marked departure from the normal type and that the palatine root does not spring out of the crown with the bold curve we so often see, but is usually upright and nearly always parallel with the direction of the other roots. We had, as you may remember, 858 specimens of abnormal teeth on view at the Annual Museum of the British Dental Association in Trinity College, Dublin, in August last, and you are also aware a great deal of time and skill was spent

* Read at the Irish Branch Meeting, December 8th, 1888.

examining, classifying and cataloguing them. The Committee adopted a high standard of excellence in their arduous work and promptly excluded all specimens that did not possess some marked characteristic, and ordinary or normal specimens were not admitted to the collection. Twelve specimens only found their way into this class, four coming from England and eight from Dublin, the latter examples being contributed by my friend Mr. George M. B. Murray and myself.

Since the annual meeting of the British Dental Association I had the good fortune to come across six more specimens which have been presented by my kind friend Mr. Gartrell of Penzance, to the permanent museum we are now forming in the Dental Hospital of Ireland. These specimens cropped up in a large collection of natural teeth, numbering some hundreds, I found in his house, and which were left there by one of his pupils, the son of a country surgeon, and were the result of a good many years' practice in extracting by his father.

So far as my memory and observation serve me—I have not, I am sorry to say, taken impressions of the jaws of patients from whom I removed these oblique rooted teeth so as to place the fact on as accurate a basis as I could wish—the dental arch and depth of the palate do not present any marked divergence from the normal type, and if you will observe in the specimens that the crowns are normal in shape, the importance as well as the difficulty of promptly discovering this peculiarity becomes impressed upon your attention.

These teeth are worthy of study, not only for their comparative rarity, judging from the small number I have been able to collect during the past twenty years during which time I have acted as a dental surgeon for several large institutions (for I have never failed to preserve any examples of the kind that have fallen under my notice), but also as adding another complication to the already numerous difficulties to be met with in the extraction of teeth. I do not think anyone possessed of a reasonable amount of experience will ever forget the unpleasant sensation felt when trying to grasp one of these teeth in the forceps in the effort to dislocate and remove the tooth from its socket. Instead of fitting the tooth and thus affording us the needful leverage to complete the operation, the blades of the forceps revolve round the tooth in the act of closure, and if you, being a careful operator, replace them and try again, you find that the blades have found their way

almost to the antero-posterior diameter of the tooth, the tooth by this movement of the forceps seeming to have become too small to be grasped. The sensation conveyed to the hand of the operator is that the tooth has revolved in the socket yet cannot be removed from the jaw. Here is the first example of the abnormality that came under my notice in the year 1866, shortly after I obtained the licence in surgery of this College. A gentleman came to me in very great pain one October afternoon and begged me to extract a tooth that had just been broken by another practitioner who had informed him "that the devil himself could not get it out." The patient was a very observant and intelligent man, and was good enough to tell me that he noticed before the tooth broke that when the forceps closed the blades revolved round the tooth; this happened a couple of times before the crown was crushed and made him determine to consult another dentist if the operation was a failure. I need not say I examined the broken tooth minutely after this statement, and I found that the gum was much lacerated both inside and outside, and that the palatine portion of the crown was broken as you see it. I cautiously tried to grasp the tooth with the usual upper molar forceps, but the slipping or rotation the patient had described was so marked I desisted—examined the tooth again and finding it very firm decided to use the elevator. Even with this powerful instrument the resistance was considerable, as you can see by the notch or groove cut by the beak of the instrument on the side of the posterior buccal root; but greatly to the delight of my patient and myself the offending tooth was promptly dislodged without further pain or trouble.

Here is the next case that came under my notice some few years afterwards with the crown crushed off the roots, yet I was able to remove it as you see it by means of the elevator. This poor patient came from the hands of a competent operator who said, "all the art of man would not extract *that* tooth." I will not weary you with particulars of the other cases I have met with,—six in all; it is sufficient to say, however, that in my opinion deliberation ought always to characterize our proceedings in all cases of extraction, and that even the sleight-of-hand "gas men" we have all read of in the last number of the **BRITISH DENTAL ASSOCIATION JOURNAL**, will certainly positively fail to extract more than one of these abnominal teeth, much less five or six during one administration of gas. You have only to look at the specimens

given to the museum by Mr. Gartrell to see that it was something more than a mere turn of the wrist that conquered the resistance in these exceedingly difficult cases; one has, as you see, the crown badly fractured, and these specimens retain part of the external plate of the alveolus, just as much as would be caught by the buccal blade of a forceps pushed well up probably outside the gum in the effort to remove the tooth, regardless of the risk of injury to the surrounding parts. You have in this specimen the only example I have ever seen of this abnormality in a bicuspid, which is, as you see, an unusually flattened one from the lower jaw, and with close examination you see how narrowly it escaped having four roots.

I hope I have not over-estimated the importance of this abnormality and that I have not wasted your time in bringing it before you. The difficulty of diagnosis, the improbability of removing such a tooth by ordinary and routine methods, the rarity of its occurrence as well as the deformity adding another serious difficulty to the many complications of extraction, have impelled me to place these interesting specimens before you.

Improvements in Cheek Restorers or Plumpers.*

By Mr. WALL, L.D.S.I.

THE instruments, Mr. President, I am to speak about this evening are but little alluded to in dental literature, possibly on account of being so rarely required. I refer to what are called cheek restorers or plumpers. This one I now exhibit has been used by a lady for some years, as she had worn others, all of which were somewhat similarly constructed.

The object of this instrument was to dilate one cheek, and the cause of its necessity, as related by the patient, as follows:—

“In her childhood, from being improperly cared for throughout a serious illness, a portion of the inside of one of her cheeks became much inflamed, and in treating this misadventure a part of the inside was removed, thinning the cheek so much that it caused a funnel-shaped depression on the outside.”

This lady in time sought the aid of eminent dentists to remedy this deformity, remaining their patient until each in succession

* Read at the Irish Branch Meeting on December 8th, 1888.

passed to "the undiscovered country from whose bourn no traveller returns."

This cheek restorer is made of vulcanised india-rubber attached by like material to a gold palate plate. When worn, although it accomplished the removal of the depression, it gave to the cheek an unnatural appearance, and the patient could not open her mouth fully, nor eat when using it; its large size and rigidity strained the muscles of the cheek, and the patient complained that the use of the restorers had made her cheek thinner, and each new restorer, consequently, had to be made larger so that she dreaded the eventual consequences. Its great weight, also, tended to injure and loosen the natural teeth.

The desirability of having the restorer made smaller was suggested, but this was objected to on the plea of having been tried before, and that the lessening of the size had allowed a pitting in the cheek with *some* of the movements of its muscles.

I then made this instrument formed (to facilitate its desirable adjustment) in two parts, *i.e.*, the palate plate with artificial teeth, and the cheek restorer, which is attached to the plate by a gold coil spring and a piece of gold plate bent to slip into a slot at its side.

The cheek restorer is made of vulcanised india rubber, convex on the outside and concave inside, comparatively small and moves, owing to the spring mentioned, with the muscles of the cheek, allowing the cheek an animated appearance and the patient to eat when using it and to open her mouth fully. The weight of the instrument is about half that of the other.

REPORTS OF SOCIETIES AND OTHER MEETINGS.

The Odontological Society of Great Britain.

THE Annual General Meeting of the Odontological Society of Great Britain was held on January 14th, at the Society's Rooms, 40, Leicester Square. Mr. S. J. HUTCHINSON, M.R.C.S., L.D.S., Vice-President, in the chair. There was a large attendance of members, and several visitors were present.

The CHAIRMAN said that a recommendation from Council was before the meeting, "that three additional non-resident members of Council be elected at the Annual General Meeting." This was adopted.

Mr. FELIX WEISS then proposed the following alterations in the bye-laws :

XVIII. The Officers of the Society shall be elected from the Members, and shall consist of a President, six Vice-Presidents, a Treasurer, a Librarian, and three Secretaries (two in ordinary, and one for foreign correspondence); who, with fifteen other Members, the Curator of the Museum, *ex-officio*, and the Editor of the Transactions, *ex-officio*, shall constitute the Council, and shall have the management of the Society's affairs.

To read—

XVIII. The officers of the Society shall be elected from the Members, and shall consist of a President, six Vice-Presidents, a Treasurer, a Librarian, and three Secretaries (two in ordinary, and one for foreign correspondence); who, with *eighteen* other Members, the Curator of the Museum, *ex-officio*, and the Editor of the Transactions, *ex-officio*, shall constitute the Council, and shall have the management of the Society's affairs.

XIX. The President, three of the Vice-Presidents, the Treasurer, the Librarian, the three Secretaries, and nine of the Councillors shall be elected from the Resident Members, but the Council may recommend a President from the non-resident members not oftener than once in three years. The remaining three Vice-Presidents and six Councillors shall be elected from the Non-Resident Members.

To read—

XIX. The President, three of the Vice-Presidents, the Treasurer, the Librarian, the three Secretaries, and nine of the Councillors, shall be elected from the Resident Members, but the Council may recommend a President from the Non-Resident Members not oftener than once in three years. The remaining three Vice-Presidents and *nine* Councillors shall be elected from the Non-Resident Members.

XXII. Of the fifteen Councillors, three of the Resident, and two of the Non-Resident, shall go out of the Council by rotation annually; and shall not be eligible for re-election for the ensuing year. The other ten shall remain on the Council.

To read—

XXII. Of the fifteen Councillors, three of the Resident, and *three* of the Non-Resident, shall go out of the Council by rotation annually ; and shall not be eligible for re-election for the ensuing year. The other *twelve* shall remain on the Council.

He felt that it might possibly be thought, as more non-resident members of Council were being elected, that there had been some difficulty in getting country members to attend the Council meetings, but this was not so. In spite of the distances non-resident councillors had to come, they had been most sedulous in their attendances, and he believed some had not missed a single meeting. It had been thought right that country members should receive fuller representation, and he was glad to welcome more non-resident members to seats upon the Council.

Mr. THOMAS ARNOLD ROGERS, in seconding the motion, said he felt it needed little recommendation, for all felt the zeal of the country members had well earned further representation, and he trusted they would in the future see more of them. They had commenced with twenty members of Council, and now they numbered thirty-two.

The motion was unanimously carried.

In reply to a question from Mr. Stocken, the Chairman said that the resolutions would come into force at once, and that the vacancies so created would be filled by election at a special meeting of the Council to be held for that purpose.

Mr. HERN reported a case of imbedded artificial denture. The patient, a woman aged forty-five, had worn a denture for ten years without once removing it. She applied for relief at the Dental Hospital, May, 1888, complaining of something amiss with her tongue and soft parts of her mouth. Examination revealed anaesthesia of right half of tongue in front of circumvallate papillæ. The upper plate made of vulcanite and lower of dental alloy were united by springs, but on looking into the mouth the plate was scarcely perceptible, the springs seeming to work through granulations. Examined with a mirror the lower plate was seen to have worked downwards, backwards and to the right, and to have cut deeply into the tongue and into the body and ascending ramus of the jaw on the right side, dividing also the right anterior pillar of the fauces. The springs were cut and the plates removed, much difficulty being experienced and apprehension felt lest some

contiguous artery might have been ulcerated. Some bleeding followed the removal of the plate. Upon a subsequent examination the gustatory nerve was discovered lying exposed, and looking like a tense white cord. As touching this gave sensation at the tip of the tongue, Mr. Hern thought that the patient would eventually recover from the anæsthesia, which had clearly resulted from the injury to the gustatory. Similar cases had been under the care of Mr. Canton in 1879, and Mr. Claude Rogers in 1880. In this latter case a lower plate had eaten into the lower jaw and was actually to be felt from the outside. Although both he and his patient were at one time apprehensive of cancer, he believed there was now little fear of it.

Mr. CANTON, narrating the case to which Mr. Hern had referred, said the patient had come to him complaining of dysphagia. The mouth when looked into seemed to contain two tongues. The patient had worn continually for some years a bar lower, which had worked its way downwards and ulcerated its way dividing the frænum linguæ and cutting deeply into the substance of the tongue; the raw ulcerated surfaces had united over the bar so that the denture was removed with the utmost difficulty and only by the use of the knife. It was a curious fact that so extensive a degree of ulceration as occurred in these cases should give rise to so little pain. Possibly the extreme slowness of the process accounted for this.

Mr. ROBBINS narrated a similar case. A lower denture had been worn continuously, and although it had not become dislodged a bridge of tartar had formed upon it and had ulcerated through the frænum and also attacked the floor of the mouth. As the patient had had her breast removed for cancer, the mouth trouble might, it had been feared, have had a malignant character.

Dr. GEORGE CUNNINGHAM had a patient whose upper denture, having been used continuously, had worn sharp at its posterior extremity, and the irritation of this had caused growths of mucous membrane to imbed the plate, giving the impression that there were two palates. He had advised that the plate should be taken out and the flaps of mucous membrane cut off. The overgrowth, he believed, had originated from excessive pressure from the posterior margin of the plate.

Mr. STOCKEN had met with a case in which the upper denture had become overgrown by a gum growth. The plate was removed with difficulty. He believed the plate had been fitted too soon

after extraction of teeth ; it had been worn continuously for seven years.

Mr. HOCKLEY pointed out that these cases indicated the importance of instructing patients to remove their plates frequently.

Mr. CANTON had met with a case like Dr. Cunningham's. The overgrowth of mucous membrane was, he thought, due to an ill-fitting plate, moving laterally and irritating the parts.

Mr. C. A. HAYMAN read the notes of a case in which he had contrived a very satisfactory apparatus for replacing the parts of the jaws and face removed in the course of operations for the eradication of a sarcoma affecting the bones and soft parts of the face. The patient was shown and the apparatus demonstrated.

Two months ago the patient, aged 46, called on Mr. Hayman ; he stated that two years previously a growth had appeared in the vicinity of the right eye which increased in six months. This turned out to be a sarcoma of the superior maxilla, and that bone was removed by operation in the Bristol Royal Infirmary ; recurrence took place and a further operation was undertaken, but the growth again recurred. The patient then came under the care of Mr. Morris, of the Middlesex Hospital, who removed the growth, taking away the eye, floor of the orbit and what amounted to the whole of the right side of the face. After the operation a large chasm remained, the roof of which was formed by the roof of the orbit, the inner wall by the septum of the nose, the outer wall by the outer wall of the orbit, pterygoid processes, and ascending ramus of the lower jaw, the floor being formed by the tongue, and a portion of the soft palate. Posteriorly it opened widely into the pharynx. Mr. Hayman adopted the following steps to remedy the deformity. A model of the mouth was obtained after considerable difficulty, as the lips were contracted ; a tray was modelled in wax and made in vulcanite, and a model taken in Ar composition. An ordinary upper plate was made in the ordinary manner.

Making the palate hold. — This was more difficult than in ordinary cases of congenital cleft. A slight flange of vulcanite was extended to fit outside the face in front of the ramus of the jaw, and against the septum nasi ; then a large wedge of vulcanite was added to fit into the posterior nares. This palate improved speech and mastication. A model of the remaining hollow was then taken in beeswax ; this was cast in plaster of Paris, moulded in sand, and casts and dies were taken in metal. A silver plate

made in two sections was struck up, soldered together and fitted to the face ; it fitted under the right ala nasi and a piece of silver passed over the bridge of the nose, allowing spectacles to be soldered to it. The artificial cheek and eye were then modelled in wax to match the other side of the face ; this was moulded in sand, metal casts and dies taken. A large piece of silver was struck between the metal casts (models) and fitted and soldered to the inner plate, like putting a cover to a box. A vent hole was drilled to prevent warping in cooling. The mask was kept in position by strong wire extending from the cheek to the right ear, while a pair of spectacles was soldered to the nose piece, the ear pieces of these being connected behind the head by an elastic band. The eye and face were then painted and japanned. In answer to questions, Mr. Hayman stated that the vulcanite palate was solid, as it had to be made by a process of building up upon the original model ; the patient habitually slept with the palate in to avoid cold air injuring him ; the cheek was taken off at night.

Mr. E. LLOYD WILLIAMS narrated the following case as illustrating the amount of absorption which followed plugging apertures in the mouth. A patient, aged fifty-seven, had been troubled by two upper left molar teeth which he had been in the habit of loosening with his fingers without succeeding in their removal. Subsequently, however, he managed to push them out ; a small hole leading into the antrum caused him inconvenience, as fluids, food, and tobacco smoke found their way into the nose. To remedy this the patient plugged with gutta percha, and as this caused an increased aperture, he put in more and more ; he finally supplemented gutta percha by the stalk of a lettuce. When this failed he came to Mr. Williams, who found a hole an inch in diameter, and much foetor, the mucous membrane having ulcerated where the gutta percha had impinged and pressed upon it. He removed the gutta percha, fitted a simple obturator, the ulceration healed, and the cavity decreased in size.

Mr. STORER BENNETT showed and presented to the museum a skull of a cheetah, a perfect specimen of a carnivore's skull, also the skull of a young seal with its dentition complete, although all the teeth were not erupted, thus showing the transition between the first and second dentitions.

Dr. WILLIAM MITCHELL narrated a case of extreme irritability of the inferior dental nerve. Considerable difficulty was ex-

perienced in taking an impression owing to the retching, and plaster of Paris could not be used. At length upper and lower sets being completed the patient tried in vain to wear them; their presence excited pain and retching, choking and other alarming symptoms; repeated efforts to wear them failed. Minute examination then showed that owing to the amount of absorpion of the gums and alveoli the inferior dental nerve had become quite superficial, and it was owing to the pressure upon this nerve that the trouble had arisen. By shortening the plate and putting on one instead of two molars, the difficulty was overcome. It was then discovered that a plate previously worn had been made according to these lines. Dr. Mitchell also narrated a case in which, owing to a carriage accident, two perforations of the palate had been formed, one in the region of the incisors, the other in the hard palate. The usual troubles of the regurgitation of food and fluids took place; the case was treated by covering the apertures, by making an upper denture of continuous gum work, which acted like a simple obturator.

Mr. THOMAS ARNOLD ROGERS (the Treasurer) then read his report. He congratulated the Society upon its financial condition. The balance at the bankers, although less than that of last year, was satisfactory; the expenses of the current year had been heavier owing to increased rent and cost of the Transactions. He thanked the members for the many kindnesses to himself, and begged that they would add yet one more, viz., the punctual payment of their subscriptions.

The LIBRARIAN (Mr. Felix Weiss) in tendering his report, congratulated the Society upon having one of the finest collections of dental literature extant. A large number of members had availed themselves of the library for reference.

The CURATOR (Mr. Storer Bennett) reported that fewer specimens had that year been received, *i.e.*, twenty-nine as against fifty-three in 1887, and forty-one in 1886. The structural alterations in the Society's rooms had interfered with the due arrangement of specimens; he trusted that the heavy labour of re-arrangement would shortly be completed, when he proposed to affix descriptive labels to all specimens.

The CHAIRMAN then read a letter from the President, Mr Daniel Corbett, expressing his regret that his age and infirm health prevented his attendance to deliver a valedictory address to the Society.

Mr. DAVID HEPBURN proposed and Mr. R. HALL WOODHOUSE seconded the customary vote of thanks to the retiring president, vice-presidents, and other officers of the Society, for which Mr. HUTCHINSON from the chair, and Mr. THOMAS ARNOLD ROGERS returned thanks.

The following is a list of the officers elected :—

PRESIDENT.—Henry Sewill.

VICE-PRESIDENTS.—(*Resident*) J. H. Mummery, W. F. Forsyth, Felix Weiss; (*Non-resident*) G. C. McAdam (Hereford), J. Cornelius-Wheeler (Southsea), W. Bowman Macleod (Edinburgh).

TREASURER.—Thomas Arnold Rogers.

LIBRARIAN.—Ashley Gibbings.

CURATOR.—Storer Bennett.

EDITOR OF THE TRANSACTIONS.—Walter Coffin.

HONORARY SECRETARIES.—C. J. Boyd Wallis (*Council*), E. G. Betts (*Society*), J. Ackery (*Foreign Correspondence*).

COUNCILLORS.—(*Resident*) John Fairbank, David Hepburn, Ashley W. Barrett, R. H. Woodhouse, L. Matheson, W. Scott Thomson, C. S. Tomes, Willoughby Weiss, W. H. Woodruff; (*Non-resident*) E. Apperley (Stroud), J. H. Redman (Brighton), R. Wentworth White (Norwich), T. C. Parson (Clifton), R. T. Stack (Dublin), F. J. Vanderpant (Kingston-on-Thames).

MINOR NOTICES AND CRITICAL ABSTRACTS.

A Novel Extension of the Uses of Cocaine.*

By E. HURRY FENWICK, F.R.C.S.,

ASSISTANT SURGEON TO THE LONDON HOSPITAL, SURGEON (OUT-PATIENTS) TO ST. PETER'S HOSPITAL FOR URINARY DISEASE.

THE use of cocaine has been hitherto restricted to the production of *local* anæsthesia. Its anæsthetic property is too well known and appreciated to tolerate even a passing reference. Other local anæsthetics are, however, making their way to the front, such as kavin, kandel, erythrophlœum (?) (Sassy). It is wise, therefore, to ask ourselves if cocaine is possessed of other powers besides those which render it of topical value. After a

* Excerpt from lectures on "The Therapeutical Value of the more recent additions to the Genito-Urinary Pharmacopœia" (*The Lancet*, Sept. 1887), read before the Medical Society, Jan. 9th, 1888.

large routine experience of the drug, I do not hesitate to answer that question in the affirmative, and to assert that its capabilities have not been justly estimated. I have used it as a therapeutic, diagnostic, and prophylactic agent for three years, and I now wish to place it in these, and I believe novel, aspects before the profession.

My first grasp of its greater capacity was due to an accident. Soon after the introduction of the alkaloid a gentleman came to me from Servia complaining of constant pain in his face, limbs, and urethra. The urethral pain had existed for five years, and was consequent upon an attack of gonorrhœa. The patient was a well-built athletic man of forty. He had had several severe attacks of malaria. His knee jerks were excessive, and his pupils unequal. He had a frequent desire to vomit, and complained of pins-and-needles sensations in his limbs, which he described as "feeling like small grains of glass fixed in his muscles." He had lost all sexual power. There was no swaying gait, and no residual urine. Believing that his nervous system was thoroughly demoralised by malaria, and that under these circumstances a urethral granulation might have induced and augmented the continual neuralgia he was suffering from, I proceeded to pass an endoscope and examine his urethra. Before doing so I applied, in the ordinary routine fashion, a few drops of a 20 per cent. solution of cocaine to the canal. In about 60 seconds he exclaimed that the neuralgia in his face and limbs was leaving him, and in 120 seconds he was completely free from the pain, which he assured me had been so constant a source of anxiety as to cause him to resign an important and lucrative official position. I found a granulation patch (?),* and cauterised it lightly. He rapidly recovered, and, I believe, returned to Servia in anticipation of the then approaching war.

The question that was thus forced upon me was this : Are we able to reduce pain in any part of the body by means of a topical application of cocaine to an absorbent mucous membrane like the urethra ? To obtain a perfectly unbiassed answer I examined the effects of cocaine upon a large series of decapitated frogs, taking them in spring, summer, autumn, and winter ; for, as is well known, their reflex excitabilities vary according to the period of the year. The frogs were decapitated and their toes dipped into

* A note of interrogation is used because the old-fashioned endoscope was employed.

a standard solution of sulphuric acid (2 in 1000, Türk). The length of time elapsing before the leg was twitched out of the fluid, and protective movements were made, was noted. Usually this reflex excitability is manifested in .008 to .015 seconds. A few drops of a 20 per cent. solution of cocaine were now gently thrown into the cloaca so as to inject the bladder and rectum, and the leg was again dipped in the standard solution. The reflex excitability was found to be greatly diminished. Thus the leg was not withdrawn until after 20, 30, 60, or even more seconds. After many control experiments I concluded that cocaine was possessed of considerable reflex inhibitory powers. I now worked with stronger acid solutions, and found that cocaine exerted less and less inhibitory control as the strength of the acid solution was increased, *i.e.*, as the stimulus increased. Thus, the leg was almost *immediately* twitched out of a 1 per cent. solution of sulphuric acid, although a vesico-rectal injection of a 20 per cent. solution of cocaine had been administered. With stronger solutions it was evident that cocaine could not prevent the consciousness of the spinal cord nor repress the manifestation of reflex excitability. My conclusions and indications for clinical research were therefore as follows:—1. The application of cocaine temporarily abolishes the consciousness of *weak* stimuli, such as would correspond to slight nerve irritations, neuralgias, &c. 2. The application of cocaine has no power whatever over stronger stimuli, such as would correspond to the pain of carcinoma, inflammation, &c.

I now returned to my clinical field and treated over a hundred cases of neuralgic pains in various parts of the body. In all cases in which the pain was slight and the cause trivial, a freedom from pain was produced in from 30 to 180 seconds by the injection of a few drops of a 20 per cent. solution of cocaine into the urethra. The following are picked illustrations.

CASE 1.—A man entered the out-patient department with a wry neck. Although his discomfort was evidently great, yet he suffered but little if he kept his head resting on his right shoulder. Directly he attempted to bring his head to its proper vertical position severe clonic spasms were induced in the muscles of the face and neck, and he shouted with pain. He stated that he had been forced for three months to sleep propped up in bed, because his wry neck prevented him taking rest in the recumbent position. I examined him very carefully to eliminate bone disease, and finally diagnosed a rheumatic affection of the muscles. Without any

explanation, I injected into the urethra thirty drops of a 20 per cent. solution of cocaine and watched the effect upon the wry neck. For 20 seconds there was no change. After 40 seconds the stiffness and the cramp began to leave him. In 60 seconds he was rotating his head excitedly, but with perfect ease and without pain. The relief was complete for some hours. Soda salicylate, potassium iodide, and embrocations relieved him permanently in three or four weeks.

CASE 2.—An educated man, aged sixty-eight, came to me complaining of a severe burning and stinging pain along the course of the left second intercostal nerve, passing from spine to sternum and along the left arm. There were scars of a recent herpes zoster in these positions. A urethral injection of twenty drops of a 20 per cent. solution of cocaine entirely removed the pain in 30 seconds. Complete relief was thus obtained for some hours, and permanent relief after a fortnight's administration of soda salicylate.

CASE 3.—W. S—, aged thirty-eight, married, nine children, came complaining that he had been "suffering" from (worried by?) a burning pain in his glans penis and legs for seven years. He had no syphilis, ataxia, malaria, or vesico-urethral disease. Some relief was obtained from a mixture of potassium bromide and valerian. I then lost sight of him for months. One day he appeared limping and in evident pain. He stated that for three months the pain in his calves, ankles, and insteps had increased. "Sometimes," said he, "it is the left leg, sometimes the right, now it is both, and I can hardly hobble for pain." I injected thirty minims of a 20 per cent. solution of cocaine into his urethra, and in 90 seconds he was stepping lightly up and down the room. Relief was obtained for some hours, with subsequent recovery.

These cases are certainly striking ones. I give them as uncoloured and as bald as possible. I should hardly like to publish them had not similar results been demonstrated to a large number of students and some medical men, and had not each of my professional *confrères* the power of examining the question for himself.

But there are cases in which the pain is due to some direct and severe source of irritation, and in these cocaine fails absolutely. The following are examples :—

CASE 1.—A patient with carcinoma of cervical glands, and suffering acute pain, experienced no relief from a urethral injection of cocaine.

CASE 2.—Pain from the passage of a spiculated renal calculus. Relief was obtained for one minute by means of a cocaine injection; "then an increase (?) of pain" was experienced.

CASE 3.—Pain due to carcinoma of the prostate. A cocaine injection into the urethra gave slight relief for a minute, "then increased (?) the pain."

We have therefore a clinical corroboration of the physiological results of a cocaine application. We may formulate the matter thus: If pain in any part of the body be due to a *slight* nerve irritation of an unimportant character, a cocaine injection into the urethra will rapidly relieve it. If, on the contrary, the pain is due to severe nerve irritation a cocaine injection will not relieve it. These facts open a large field in the differential diagnosis of the causes of pain, as well as the just estimation of the amount of pain experienced by neurotics and others. I have used it largely in the diagnosis of urinary diseases. For instance, in cases of renal pain, if a urethral injection of a 20 per cent. solution of cocaine immediately relieves a pain in the kidneys, I diagnose a transient or unimportant cause for that pain, such as congestion, uratic urine or grit, colonic pressure, &c. If, however, the renal pain is uninfluenced by such an injection, I give a more guarded prognosis, and this has been several times verified by the subsequent passage of small stone, or, as in one case, by the development of a renal carcinoma. There are also various vesico-urethral diseases in which cocaine thus used has proved of diagnostic value, as in glans pain, urethral pain, suprapubic pain, &c. Lastly, there is every reason to believe that it will prove of value as a prophylactic agent in warding off, by inhibition, the untoward effects of reflex renal flooding after operations upon the bladder and urethra. I have used the drug with this object for a couple of years, and I hope soon to be able to bring forward physiological as well as clinical evidence upon this point.—*Lancet*.

Dental Quackery and False Personation.

MR. TURNER, in his excellent address to the past and present students of the Dental Hospital, remarked that our poor and our quacks will be always with us, and the truism admits of absolutely general application. But the presence of the latter class of persons, though incapable of total exclusion from the ranks of the

dental profession, may yet be, in a considerable degree, brought under control by the judicious exercise of powers placed in our hands by the Legislature. Of these powers foremost stands the issue from schools and colleges of a supply of adequately educated practitioners capable of rendering to the public the full and complete service of dental surgery. The provisions of the Dentists Act have rendered such a supply of practitioners practicable by placing educational control in the hands of the surgical colleges, and the supervision of the education, with the qualifying registration, in the hands solely of the Medical Council. Under these stable powers the dental student is now, and for some time past has been, required, before entering upon his professional studies, to pass a prescribed examination in the subjects of general education in common with the medical student, the educational equipment at starting being alike in the dental and medical student, and the course of professional studies for a time proceeding on similar lines. But, in order that the dental student may acquire an adequate amount of manipulative skill, an acquisition attainable in youth only, save in exceptional instances of exceptional aptitude, it is necessary that he should devote a fair share of his time from the outset to dental operations under competent instructors. The fingers must grow to their work, a condition necessary to the attainment of a high degree of excellence in many callings equally with dentistry, but not more necessary in any of them than in the latter.

It may be justly said that the dental student, when he has honestly conformed to the existing education, and gained by examination a place for his name in the *Dentists' Register*, enters upon practice more fully educated than any other professional man; for he has, through a period of four years, been almost daily engaged in performing under competent instructors all the operations embraced in dental surgery. Professional education cannot go further, and if this point is not reached the Medical Council, as the supervisor, is at fault primarily, and the Colleges are in a scarcely less degree blameable.

It is within the reach of these powerful bodies—trustees they may be called of the dental profession, on behalf of the public and of the profession itself—to abate, if not wholly to suspend, the mischief and scandal of dental quackery; and there are unmistakable signs that the quack is now obliged, for profit's sake, to shift his ground, and try the effect of collective in the place of

the failing personal puffs. Dental dispensaries, and institutions where marvels are said to be achieved by a body of selected operators, send forth their invitations to the public.

A second power of abatement lies in the effective power of successful prosecution of unregistered persons who proclaim themselves dentists, &c. The many cases undertaken by the British Dental Association have invariably led to conviction and the attendant fines. In this matter the Dentists Act in its penal clauses is quite free from the baneful ambiguity of the Medical Act, and in this respect needs no further amendment. False personation by unregistered persons could, there is little doubt, be dealt with by the Association as a matter of fine, but the registered cover is beyond its reach.

The third great power—the power of professional life or death, by the removal of a name from the *Register*—lies solely in the Medical Council, and there is no appeal against its decision if the provisions of the Act are strictly followed. A permanent Dental Committee is provided, and its findings as to the facts of a case submitted for its investigation are final, and the Council must act upon these facts. It is not allowed to accept the findings of any other body, although that body has within its powers removed the name of a licentiate from its register. For instance, the Irish College of Surgeons grants its Licentiate-ship in Dental Surgery on a condition signed by the receiver that the qualification shall be forfeited if he attracts business by means of public advertisements. A case of breach of contract occurred, the name was struck off the College register, and was ultimately erased from the *Dentists' Register* on the finding of the Dental Committee that the breach of contract with the circumstances attendant thereon was, in the words of the Act, disgraceful in a professional respect.

But the converse of this position does not in the Dentists Act hold good. For if the Medical Council erases the name of a Licentiate from the *Dentists' Register*, the name must also be erased from the list of the College from which he obtained his Licentiate-ship, and must be again restored to such list if the Council directs its restoration to the *Dentists' Register*.

The minutes of the recent meeting of the Medical Council contain an account of the powers of erasure of names from their lists of members, &c., possessed by the several medical authorities. Some appear to have ample powers, in others the power is less clearly defined, and some bodies have no power of erasure.

Some would like to have the power, others require the power to be better defined, while others on the contrary do not desire to possess the power of erasure, considering that the Medical Council, as the body at the head of and representing all the authorities, should undertake the investigation of cases of misconduct, for it alone can remove a name from the *Medical Register*, and those who render themselves liable to erasure from a College list would care little for its removal therefrom, so long as it is allowed to remain on the *Medical Register*. The framers of the Dentists Act took this view of the case, and much may be said in its favour. One argument against the Medical Council taking the initiative in the investigation of professional misconduct is based on the great pecuniary cost that attends every action of the Council. Still, if need be, this excessive cost may be very greatly reduced. It is believed that a guinea is the usual fee of members for the attendance at meetings of Councils of the medical corporations. Yet the office is attended with so much honour and influence that the place is eagerly sought by distinguished members of the profession. The honour and influence that go with a seat on the Medical Council are far greater than that attendant upon the corresponding office in a medical corporation.

The medical authorities and Medical Council have done much, are doing much, and can do much more by means they already possess towards the gradual abatement of quackery. By punishing disgraceful conduct by erasure, and by rendering an adequate education compulsory, they can render quackery profitless, unless action is checked by the exhaustion of funds brought about by the excessive cost of their meetings. In the minutes already referred to, the President states that "a recent (medical) case, for example, cost for sittings of the Council £294; it would have been £326 had all the members been present."

It is a good sign that attention to excess of cost is brought before the Council by its President, and in other respects the minutes of the last meeting give promise that better times in the general regulation of the profession, regarded as a whole, are coming.—*The British Medical Journal*, Dec. 22, 1888.

Dental Quackery.

At the dinner of the past and present students held in connection with the London School of Dental Surgery, Mr. James Smith Turner, the chairman, made some pertinent remarks.

Referring to the past, he said that the importance of the Dental Act lay in its requiring all dentists to take the L.D.S. diploma. Consideration for vested interests required the admission of those persons who were reputed dentists before the passing of the Act, as well as apprentices; but as time went on the *Register* would by a natural process be freed from all names save those to which was appended the title L.D.S. (Licentiate in Dental Surgery). It was pointed out that the public had yet to learn the true significance of the title L.D.S. It implied that he who lawfully used it had passed a qualifying examination in arts similar to that which his medical brethren were obliged to undergo, and had, after *five years* of patient and laborious study alike with hands and head, successfully satisfied the test of a final examination in all the subjects of his profession. This qualifying test was administered by a conjoint board of examiners, half surgical and half dental, but composed wholly of representative and picked men. The licentiates in dental surgery were not only competed with by the men who were placed upon the *Dental Register* by virtue of their supposed vested rights, but by a whole army of quacks and charlatans, conspicuous amongst whom were the so-called American dentists. Science and art were cosmopolitan, and all that was legitimate and useful in dentistry was as much English as American; but because the credulous public had, by dint of the advertisements of dental cheap-jacks, got a craze that American dentistry was a superfine form of that art, a number of persons had obtained bogus degrees from disreputable American colleges condemned alike by the American and English professions. There were some Americans who had settled in England and there practised dentistry, and were acting like gentlemen and colleagues to their English *confrères*; of such men he had only good to speak: they neither called themselves doctors, although they held *bonâ fide* and respectable American degrees, nor professed to be exponents of the so-called American dentistry. It is certainly an unfortunate fact that, as Mr. Smith Turner says, the British public are not better informed concerning the true character of English and the so-called "American" dentists. Just as the ethics of the medical profession discountenance advertising or commercial methods among its members, so does the equally high ethical code promulgated by the British Dental Association. The dental profession of England is part and parcel of the medical, and should receive its moral support; every year it is becoming more usual for dentists to take surgical and medical diplomas,

and so they become still more in unison with the great healing art. Whatever may be said of individual Americans who practise dentistry in this country, there is no doubt that the system of dental education in America leaves much to be desired, and is far less thorough than that in vogue in our London schools, and the open and unblushing system of advertising pursued by the professing American dentists ought to be quite enough to condemn them in the eyes of all medical men and the thoughtful public. It has long since been decided that it is a disgraceful practice for medical men to advertise either openly or covertly; so, surely, we owe it to our dental friends to do all that is in our power to help them in suppressing that vicious practice among dentists, and supporting them in their crusade against humbug and imposition.—*The Lancet*, December 8, 1888.

ANNOTATIONS.

THE meetings of the committees with reference to the coming annual gathering at Brighton have already begun, and we trust the work of organisation may be achieved without the sacrifice of health on the part of the secretaries. The brilliant meeting of last year proved, we regret to say, altogether too great a strain upon Mr. Booth-Pearsall's strength, and after the meeting the subsequent unceasing worry about all sorts of details resulted in something very little short of a complete breakdown. We have no doubt that the secretary of the Irish Branch will soon be himself again, but those who undertake similar duties will do well to take to heart the lesson that the human machine may be overstrained, and those whose forte is criticism rather than organisation, will perhaps make allowances and remember that the work attendant upon these meetings is really very great and is gratuitously undertaken by men who have already plenty to do in the ordinary routine of life.

THE pamphlet containing the letter on quackery reprinted from a previous issue of this Journal is rapidly passing through its first edition. It evidently represents the opinions of a large number of practitioners to judge by the sale, and is answering the purpose for which it was written, namely, to provide those who feel strongly with the writer but are not equal to the task of giving proper expression to their thoughts, with a clear statement that can be

handed to the enquirer without the loss of time attendant upon a long explanation. We again remind our readers that it is to be obtained of Messrs. Bale & Sons, 87, Great Titchfield Street, W., at 4½d. per dozen or 2s. 6d. per hundred, post free.

At a meeting recently held at Cambridge, it was decided after some discussion that the dental department at the Addenbrooke Hospital (which, our readers will remember, was started somewhat as an experiment two years ago), be definitely established, and that two honorary dentists registered under the Dentists Act be appointed for a term of six years, but otherwise subject to the rules governing the election of the honorary physicians and surgeons. In the course of the discussion Mr. George Cunningham, to whose energy the existence of this dental department is in a great measure due, urged the importance of attending to the preservation of teeth as opposed to their wholesale extraction.

A MEETING of the Students' Society of the Dental Hospital of London, was held on December 10th, Mr. William Hern, President, in the chair. After the preliminary business had been gone through and some casual communications given by Messrs. Spray, Cohen, Dunlop and Welharn, Mr. Harsant read an instructive paper on "Fractures of the Jaw and their Treatment," illustrating it by a series of models and splints. The paper having been discussed and further illustrative models shown by the President, and a vote of thanks moved to Mr. Harsant and also to the gentlemen who had given the casual communications, the meeting was adjourned to Monday, January 21st, at which the office bearers for the year will be elected, and a paper on "Dental Abscess" will be read by Mr. W. H. Dolamore.

DENTAL HOSPITAL OF LONDON ATHLETIC CLUB.—The second Smoking Concert of the above Club was held on Thursday, Dec. 13th, at the Hummum's Hotel, Covent Garden, F. Woodhouse Braine occupying the chair. An excellent and lengthy programme was got through, and altogether a very pleasant evening spent. The principal features of the programme were the conjuring entertainment given by Mr. Harris, the comic songs of Mr. Paul, the recitations of Mr. G. Read, and last, but not least, the excellent rendering of a selection from "Trial by Jury," by members of the Musical Society. The part of "Judge" was taken by Mr. E.

Lloyd Williams, while Messrs. Barratt and Wheatley sustained the parts of "Usher" and "Defendant" respectively. The next concert will take place during the latter part of January, when the popular Dean, Mr. Morton Smale, will occupy the chair.

ODONTO-CHIRURGICAL SOCIETY. — The Odonto-Chirurgical Society held its first meeting for the Session on Thursday the 10th inst. Dr. Williamson, L.D.S., in the chair. Several casual communications were read and illustrated. A paper on "White Filling" was, in the absence of Mr. Whitehouse, read by the Secretary. The Society unanimously resolved and instructed the Secretary to convey their sincere sympathy with the widow and family of the late Matthew Finlayson in their bereavement, and at the same time to express their sense of the loss which the Society and the profession had sustained.

WITH the assistance of Lord Radnor the authorities at Folkestone have just decided upon a site for a new hospital near Radnor Park. The hospital, which is to be a memorial of the Queen's Jubilee, will, it is understood, be a very handsome building, and nearly £14,000 has been subscribed towards the cost.

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our Correspondents.

Examinations.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION.

DEAR SIR,—The paragraph on page 804 of the editorial for December is as unfortunate as it is injudicious. Unfortunate, because it fails to grasp the possibilities of the L.D.S. diploma, and injudicious in the probable effect it may have upon those who have it in their power to extend those possibilities, and who are liable to take their cue from this Journal as representing the opinion of the profession generally. The opinions expressed in this paragraph may be those of the Publishing Committee, but they are certainly not those of a large number of members of the Association.

The statement is made "that the time seems hardly ripe to divide up the Dental Examination into two portions." The reason given is a curious one, viz.: "that the subjects which are required of the candidates are really not so extensive, that a man of average ability has any great difficulty in carrying them in his head"; and is directly contradicted a few lines lower down by a further statement "that the dental examiners are already complaining that the candidates lack anything like real grip of their subjects."

I presume this has reference to the London College only, for

the fact is totally ignored, that for many years the examination for the dental licence has been so divided at the *option* of the candidate in Edinburgh, Glasgow, and Dublin. The first examination includes Anatomy, Physiology, and Chemistry, the final one Surgery, Medicine, Materia Medica, and dental subjects, including Dental Mechanics; and if in London it has been found that the candidates have no "grip" it would seem that the time is not unripe for the London College to try the effect of dividing the examination into two portions. Of course, how far the failure of the candidates to come up to the required standard of "grip" is due to defective teaching is another matter. It would be out of place in this Journal to offer any suggestions to the Council of the London College, but the hope may be expressed that it will not share in the opinion advanced in the editorial, viz.: that by the inclusion of more Dental Mechanics, and a still further development of the practical portion, the *ultima thule* of the dental examination will have been reached.

I would point out, without comment, that the London College differentiates between the requirements for the examination, and the examination itself; in other words, although it requires candidates to attend courses of lectures on Dental Metallurgy, Dental Mechanics, Chemistry, Materia Medica, and Medicine, yet the candidates are but slightly examined in these subjects, if at all. There is room, therefore, for considerable expansion in these matters, as compared with the examinations of the colleges of Edinburgh, Glasgow and Dublin, who examine in all the subjects scheduled.

But beyond this, the perfection of the standard of the dental examination, and of its requirements, is far from being attained. The Scotch licensing bodies have now closed their portals to *sine curriculo* candidates. The way then is clear to press for one of the dental possibilities, viz., that the requirements for the dental licence and the general licence should proceed on similar lines up to the second professional examination, that is, in anatomy, physiology, and chemistry, and that then, and then only, should the dental student specialise in his subjects. All honour to the student if he decide to take the general as well as the dental qualification, but the cry of a surgeon first and a dentist afterwards, is, I believe, an illogical one when viewed in the light of past dental reform. Rightly or wrongly—and this is beyond discussion—the whole tendency of this reform has been to specialise the subject. It is seen in the first instance in the creation by the London College of a dental diploma with a separate curriculum, and as a final result in the passing of a Dentists Act with the formation of a separate Dental Register.

But dental possibilities should not end with the L.D.S. This diploma is but the legal passport to practice, as necessary to the would-be dental practitioner as the M.R.C.S., L.R.C.P., is to the would-be general practitioner, or as a loaf to a starving man. And this explains the position of those of us who are anxious that something higher than this legal passport should be open to the dental surgeon. The action taken last summer by the Branches in Scotland with the support of some of the Branches in England, has, I think, been misconstrued. And it was but with this higher possibility in view that the suggestion was made to endeavour to obtain certain powers in the Universities (Scotland) Bill to confer degrees in dental surgery.

I am, your obedient servant,

Glasgow.

REES PRICE.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—You having in accordance with the usage now adopted by many periodicals, sent to me a proof of Mr. Rees Price's letter, I would remark that it is in one respect a severe criticism upon the leading article in question, for it proves that I have failed to convey to my readers the line of thought which was passing in my own mind. There is a very real danger that those whose time is spent, as most men's time is in fact spent, in a narrow groove of work, should get their mental horizon limited by the walls of that groove, and it is, therefore, a good thing to look outside it when opportunity offers. At the present time some of the most acute minds of this generation are exercised upon the question whether the great development of the examination test which has taken place within their memory has had the results which were hoped for, namely, the raising of the mental standard of those who submit to the examination, and the impression which prevails pretty widely is that it has not, so far as general culture and literary acquirements go, but that it has had a deleterious effect in some directions. To this discussion, initiated in the pages of the *Nineteenth Century* and about to be carried on to a debate in Parliament, it was my wish to call attention, and at the same time to add a few data culled from the experience of the English Medical Examining Boards which appear to me to tend in the same direction.

In the face of this growing doubt of the efficacy of examinations in advancing general culture, it behoves us to look carefully at the question with such outside light as we can find; but here Mr. Rees Price's letter seems to me to beg the question, and to at once assume that the end which all must alike desire—the improvement of dental education—is to be attained by an extension of its examination system. Much may be said upon both sides of this question, and it is one eminently open for argument, but the intention of the article was hardly more than to indicate that it was not quite a foregone conclusion.

With regard to the first paragraph of the letter, an editorial must be written by some one, and as there are *tot homines tot sententie*, it is not to be expected that an opinion recorded in an editorial will be in accord with that of every Member of the Association, or even an absolutely correct representation of all the shades of opinion held by members of the Publishing Committee. Indeed, I happen to know that it is not; but I would venture to point out that an opinion somewhat tentatively expressed in an editorial has not the weight of a resolution adopted by a General Meeting of the Association, nor even by one of its Committees, for it would hardly be practicable to submit each sentence to such a test, even were it desirable to do so. Were such a course pursued, and all matter upon which difference of opinion existed struck out, an editorial might be more authoritative, but it would be even duller than it is now.

THE WRITER OF THE EDITORIAL

Quackophobia and American Dentistry.

SIR,—In my free and glorious country a prominent citizen aspires to be the "great English specialist," supplementing his talents by a striking "museum" and improving lectures, and being known of all

men as a rogue and a vagabond his exploits evoke a genuine sympathy for British medical science, the popular reputation of which in the United States is as high as—let us say—that of American dentistry in this country.

Therefore if a righteous Yankee medico, falling upon him and solemnly scolding the crowd, said that after all John Bull's surgery was inferior to Jonathan's, the allusion to an irrelevant if indisputable fact would be considered as distinctly bad form.

But your able and vigorous correspondent "An English Dentist" having tripped at the idle question of the comparison of diplomas and clearly shown the superiority of British institutions, should, if quite ingenuous, thank heaven that his quacks so successfully conceal the fact that they are real "English dentists" after all—ay, and qualified ones to boot.

The main point of grievance (the acute symptom of suddenly revived quackophobia), I take to be that the advertisers, having used up everything else, as "an English dentist" explains, find the description "American" attractive; and that there is a suspicion that it may not fail as rapidly as the others. But if your correspondent assumes that the title "American dentist" is alluring, he does not account for the fact that it should be so.

Two generations of Englishfolk, unable to always otherwise discriminate, have encountered incompetency and quackery among dentists of almost all nationalities *except American*; and never, until quite recently, found the American dentist deficient in at least a fairly high standard of skill, knowledge and integrity.

The large American army of charlatans and professional backsliders has only lately by straggling outposts attempted the invasion of Great Britain, sometimes craftily enticed by traitors to her hospitable shores; but by all means let all offenders be speedily laid by the heels, without ceremony or international recriminations.

If the older established American practitioners in this country do not manifest the alacrity in the hue and cry which seems to be demanded of them, or personally protest as loudly as you, sir, editorially, appear to insist upon, it may be that some of them have not fully recovered from the astonishment of their statutory degradation ten years ago and think that if "an English dentist" with his Act of Parliament looks after his quacks, the Yankees will take good care of themselves and the fair fame of American dentistry,

I am, yours fraternally,

AN AMERICAN DENTIST.

Fog.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—I am a Londoner born and bred, and, having for many years suffered, in common with all cockneys, from the annual plague of darkness with which the inhabitants of this city are cursed, I have never complained, perhaps because as a Londoner I was of a patient disposition. I have however (although not of a malicious turn of mind) experienced a distinctly pleasurable sensation on learning that this year the dwellers in the country have not been enjoying the complete immunity which is usually their happy lot. The idea of Reading wrapped in black fog, for instance, seems to me deliciously entertaining.

But there is another good reason to be grateful for the fact that the pest has extended its dominion, and that is that, in our profession at any rate, people are not of the patient uncomplaining spirit which is so characteristic of the cockney. Now we shall hear loud complaints, and perhaps the outcome of the complaints may be a remedy of some sort. Possibly the remedy may come in the form of a light that really will enable fine and delicate work to be done in despite of the absence of sunlight, and it is with a view of raising a discussion among our inventive folk upon the question of artificial light for dental work that I have ventured to intrude myself upon your valuable space. Let us have plenty of letters, illustrated, if possible, and thresh the matter out in a thorough manner.

Yours, &c.,

AN OLD PRACTITIONER.

OBITUARY.

Matthew Finlayson, L.D.S.Ed.

WE regret to announce the death of Matthew Finlayson, L.D.S.Ed., which took place on Tuesday the 8th inst., at his residence, 23, Castle Street, Edinburgh. Mr. Finlayson was 57 years of age. He was a member of the Odontological and Odontochirurgical Societies and of the British Dental Association, and an active member of the Scottish Branch. He was esteemed and respected by a large circle of friends and acquaintances, and his stalwart presence will be missed at our professional gatherings. His son Alexander is at present a student at the Edinburgh University and Dental School.

APPOINTMENTS.

F. R. HOWARD, L.D.S.Eng., has been appointed House Surgeon to the Birmingham Dental Hospital.

SYDNEY SPOKES, M.R.C.S. and L.D.S.Edin., and Chas. W. Glassington, M.R.C.S. and L.D.S.Edin., have been appointed Medical Tutors to the National Dental College.

R. S. N. FARO has been appointed Assistant House Surgeon to the National Dental Hospital.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

Subscriptions to the Treasurer, 40, Leicester Square.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE.—All communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
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No. 2.

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Examinations.

ALTHOUGH the article on examinations published in our December number does not seem to have awakened a very widespread interest in our own immediate profession, it has attracted attention in a quarter which, if unexpected, is no less welcome. We hope that we may be pardoned for thinking that the letter of our esteemed correspondent in our last issue assails the writer of our December editorial with rather more hostility than is conducive to the calm and deliberate consideration of any question—still more so when the question is one of no personal interest but one of the greatest importance to our profession at large. The major part of the article referred to was devoted to a brief consideration of what had been said by a high authority on the effects of competitive examinations on “the minds of those who have been trained for them,” and an endeavour was made to take advantage of such considerations in studying the question of pass examina-

tions. We think that it is well to study principles before entering into the consideration of details, and in applying this to the question of dental examinations the expression that "the time seems hardly yet ripe for a change" may be pardoned by those who think otherwise, when we consider that, so far as the Journal of the Association is concerned, the question has but very recently been brought before us.

The article which we reprint from the *Journal of the British Medical Association* is one which we welcome most cordially, as evidence that dental education is receiving attention from those who have a worthy and powerful influence over our educational and examining bodies, and also because it seems to have been written by one familiar with the various views which have been floating about amongst our members for some time back, but which have never yet reached us in this distinctly formulated condition. We sincerely hope, since we now have these various aspirations of our members placed before us, that the pages of our Journal will be made the medium of their elucidation, for we surely ought to be better informed as to our wants, and take a greater interest in them than can the directors of medical journals, however friendly may be their disposition towards us, and the writer of the article we publish clearly shows the truth of this when he significantly remarks that "it would be well that dentists should definitely make up their minds."

We do not propose to enter into the merits of the "degrees" in dental qualifications referred to in this interesting article. The members of the Representative Board, who have by this time received notice of the next meeting, will see that this question will come before them in a very concrete form, and we trust that the discussion likely to arise will be exhaustive and instructive. The more detailed question of the sub-division of examinations is, how-

ever, one which must ultimately be decided by other tribunals which, with all due deference to our representatives, are more fit to form an opinion on this very important matter. And although we may formulate certain views which will, no doubt, receive ample consideration, and have due weight, they cannot be expected to be final.

Examiners have a most important duty to perform to the public which must not be lost sight of for a moment. Not only have they in a measure to gauge the acquired knowledge of a candidate, but in a pass examination they should also form some opinion as to the mental power of the individual to retain and apply the knowledge which he possesses or is supposed to possess; and certainly the drivelling one-subject-at-a-time system is not calculated to help the examiners in this particular phase of investigation, unless it be to lead them to the conclusion that the candidate who requires thus to bring a brick at a time is not likely to be able to hold together the edifice of which he aspires to be master. The effect of this system on the candidates themselves is alluded to in the December editorial, and is, like many other points in that article, though briefly stated, worthy of the consideration of all who are taking an interest in educational progress. There is, however, a wide difference between this system of subdivision and the changes mentioned as desirable in the reprint from the *British Medical Journal*. The latter seek to extend the dental curriculum and to make it co-extensive with the first part of the ordinary medical students' education; this was doubtless the intention of its original promoters. Things have very much changed in medical education since the dental curriculum was established, and it is with the view of bringing them once more into harmony, and by so doing to insure a more strict enforcement of these conditions than has recently characterised the teaching of the dental student

at the general hospitals, and thereby enhancing the value of the L.D.S. diploma, that the proposed changes seem to be shadowed forth. We cannot help thinking that if the article on examinations in our December number be read in conjunction with the reprint in our present issue, that subject matter will be found in ample abundance from which to start on the profitable consideration of dental education. One aspect of the question should not be ignored, viz., that in multiplication of examinations there must be an increase in the cost of the diploma. We know that the dental candidate who fails in the examination for the London diploma has hitherto escaped the imposition of any additional fee for re-examination. But even this privilege (?) cannot exist for ever, and neither can we expect to set all the examining machinery of a college in motion again and again without additional cost.

ASSOCIATION INTELLIGENCE.

West of Scotland Branch.

THE usual monthly meeting was held on Thursday, January 24th, at 8 p.m., in the Library of the Faculty of Physicians and Surgeons, Glasgow, JAMES CUMMING, L.D.S.Glas., President, in the chair.

Mr. J. AUSTIN BIGGS gave some details in the use of Dr. Taggart's corundum point and disc maker. He also showed clamps for the coffer dam, designed by Dr. J. W. Ivory, of Philadelphia, by which the rubber is ingeniously kept out of the reach of tools. He also showed a model of a tooth having a large crown and a proximal cavity. A piece of pure gold was burnished down to the shape of the cavity, and to the inside of it was soldered a pin. An osteo filling was then placed in the cavity, and the gold cap placed thereon and burnished down.

A mould for producing solid crowns was shown, and a method was also described for constructing a crown and collar from one piece of gold without any apparent join.

Mr. Biggs then brought forward several models of fixed bridge

work constructed by himself, which he had inserted. He said that he did not scruple to cut into a molar for anchorage when necessary, but he often found there was already a cavity or a filling in the molar where the bridge was to be applied, and which could be made use of.

This completed the casual communications, and Mr. Biggs then handed round models of removable bridge work made by Mr. Gartrell, of Penzance. The principle of his system is to save and make use of all good roots.

In model No. 1 only the roots of the upper canines were left. In these, two bolts were fixed, one in the right root and the other in the left, and these were united by a gold bar. The denture proper, consisting of ten teeth mounted upon this, was held in position by means of a groove in it.

In model No. 2 the bar was fixed to a gold crown covering the molar, and anchored at the other end into a canine. Upon this bar two bicuspsids were mounted in continuous gum work, and were removable at pleasure.

Model No. 3 consisted of a bridge of five teeth similarly removable. The teeth had been beautifully modelled and consisted of mineral faces with the body and cusps of pure gold.

A discussion followed in which all the members present took part, and the meeting closed with votes of thanks to Messrs. Gartrell and Biggs.

The next meeting will be held on Thursday, February 28th, when Mr. William Dall, L.D.S.Glas., will read a paper on "Porcelain fillings—plain and gum-coloured."

The Irish Branch.

THE first general meeting of the members of the Irish Branch of the British Dental Association, for the election of officers and council for 1889, took place on Saturday afternoon, Jan. 26th, in the Albert Hall of the Royal College of Surgeons in Ireland. Amongst those present were Messrs. Daniel Corbett, M.R.C.S., Robert H. Moore, F.R.C.S.I., A. F. Thomson, R. Hazelton, F.R.C.S.I. (Hon. Treasurer), G. M. P. Murray, F.R.C.S.I., A. W. W. Baker, M.D., John C. Clarke, L.D.S.Eng. (Belfast), Daniel Corbett, Jun., F.R.C.S.I., R. Theodore Stack, M.D., J. McStay, L.D.S.Eng. (Belfast), Joseph S. Thomson, L.D.S.Edin., Marcus J.

Bloome, L.D.S.I., J. J. Andrew, L.D.S.Eng. (Belfast), G. W. Yeats, M.B.Dub., William D. Quinn, Charles Merrilees, L.D.S., S. G. Reeves, L.D.S., A. J. Watts, L.D.S.I., and W. Booth Pearsall, F.R.C.S.I. (Hon. Sec.)

The chair was taken by DANIEL CORBETT, M.R.C.S., L.D.S., President of the British Dental Association.

Messrs. R. T. Stack, Daniel Corbett, jun., and G. M. P. Murray were appointed scrutineers of the ballot papers.

The hon. sec., W. BOOTH PEARSALL, F.R.C.S.I., then read the following report of the Council :

The Irish Branch of the British Dental Association was formed on August 13th, 1887, in the Royal College of Surgeons in Ireland, by the exertions of R. Theodore Stack, M.D., who acted as hon. sec. in all the preliminary steps to found it. The chair was taken at this memorable meeting by J. Smith Turner, of London, who at much personal inconvenience came to launch the new Irish Branch of the British Dental Association, aided by Mr. A. S. Underwood and Mr. W. H. Waite. Since the Irish Branch was formed four quarterly meetings have been held, three in Dublin, one in Belfast, at which twelve original communications have been made and many objects of interest exhibited.

Your Council have held eighteen meetings since the Branch began work, and have given much consideration and time to the various matters brought forward. Your Council took steps to have the attention of the Registrar-General for Ireland called to the instances of neglect on the part of the registrars of deaths to furnish to the secretary of the General Medical Council the names of deceased dentists as required by the Dentists Act. Those instances of neglect were most promptly and courteously remedied by the Registrar-General, and the Registrars of deaths were sternly reminded of their neglect to comply with the provisions of the Dentists Act.

Mr. John O'Duffy resigned his seat on the Council on July 16th, 1888, and on November 22nd, 1888, your Council co-opted under Bye-law 16, Mr. G. M. P. Murray, F.R.C.S.I., to fill the vacant place.

During the past year the Branch has steadily grown, thirty-one new members having been added to the Association and the Branch. We have lost one member by death, David Gillies, L.D.S.Eng., of Londonderry, and your Council tendered to his widow the following resolution :

"That this meeting of Council of the Irish Branch of the British Dental Association desires to convey to Mrs. Gillies their deep sympathy in her bereavement, and at the same time to express their high esteem of the late Mr. Gillies' professional character and attainments."

Two members have resigned, one in consequence of a remonstrance addressed to him by the Council with respect to unprofessional conduct ; the other on being asked for his subscription, which was in arrear.

The Irish Branch now numbers fifty-three members, and it is possible to still further increase that number.

Your Council have carefully considered the needful amendments to the bye-laws proposed by Dr. Stack, and have recommended them for your adoption in order that the machinery of the Branch may be perfected and its working powers increased, while unnecessary demands on the time and leisure of the honorary officers are obviated. The cumbrous nature of some of the rules throw much unnecessary work upon the officers of the Branch, as well as increase their responsibility in their self-sacrificing and often irksome duties. Dr. Stack, the Branch member of the Representative Board, will formally move these much-needed amendments at this meeting.

The greatest event in the history of the Branch has been the last Annual General Meeting of the parent Association, which took place in Dublin last August, an invitation to come to Dublin having been made to the Association Meeting in Glasgow the previous year by your hon. sec. on the part of your Council, which was most heartily accepted by the Association.

For many months the needful preparation and organisation of the meeting occupied every thought of your Executive Committee, who had a very anxious and laborious time in perfecting the arrangements necessary for the comfort, instruction and amusement of our visitors, and the Branch is indebted in no small degree to the Provost and Fellows of Trinity College, Dublin ; the President and Fellows of the Royal College of Surgeons in Ireland ; the Senate of the Royal University of Ireland ; the Commissioners of Irish Lights ; the Members of the Dublin Art Club and the Secretary of the General Post Office, and Messrs. Arthur Guinness, Son & Co., Limited, for the splendid accommodation and helpful aid in receiving and entertaining the numerous visitors from England, Scotland, Canada and the United States, as well as many lady visitors.

One of the greatest novelties and attractions proved to be the splendid temporary Museum of Dental Science, formed for this occasion in the Anatomy Room of the School of Physic, Trinity College—the most systematic and representative temporary collection ever shown at any dental meeting of the kind. This collection was largely visited by members of the medical and surgical professions, as well as the public, so that the wonderful variety of the specimens, the novel methods used to display the collection, the ingenious classification, the ample catalogue, as well as the thoroughness displayed in the selection of the specimens, was a never-ending source of congratulation from the Members of the Association who attended the Meeting. The entertainments given by the President and the Reception Committee, we are happy to know, surpassed the expectation of our visitors and their lady friends who came across the sea to attend the meeting. We take great pleasure, therefore, in having endeavoured to sustain, in a worthy and genial manner, the reputation of our native country for hospitality and kindness to “the stranger within our gates.” This Hibernian characteristic, however, would have been of little service had we not been so cordially aided and helped by the patriotic and influential corporations to whom we have expressed our obligations.

The members of the Irish Reception Committee, *i.e.*, those gentlemen who paid in their subscriptions so promptly to the bank account of the trustees of the Reception Fund, Daniel Corbett, Robert Henry Moore and W. Booth-Pearsall, numbered over two-thirds of the members of the Irish Branch, and the Council have much gratification in drawing attention to the fact that despite the liberality and completeness of the arrangements made and entertainments given, no further call had been necessary on the guarantors, thus showing how spontaneously and heartily the intelligent members of the Branch entered into the large-minded policy of the British Dental Association, and also how much they appreciate the unselfish and noble efforts which have been made for many years by James Smith Turner on behalf of the welfare and progress of British dentistry, as well as in the successful passing of the Dentists Act of 1878.

Your Council would earnestly solicit the aid and support of the members of the Branch in steadily and continuously forwarding the objects of the Association generally, and by means of our Branch meetings practise and foster the needful *esprit de corps*

as well as those professional courtesies and amenities such opportunities afford to professional men who have an earnest desire to further and develop the useful and benevolent work to which they have devoted their life and talents.

The adoption of the report was moved by J. J. ANDREW, seconded by C. MERRILEES, and carried unanimously.

Treasurer's Report, from the Foundation of Branch, August, 1887, to December 31st, 1888.

Dr.	£	s.	d.	Cr.	£	s.	d.
To 27 Subscriptions				By Printing and Re-			
for 1887 at 5s.	6	15	0	porting ...	5	7	8
" 49 Subscriptions				„ Balance in Trea-			
for 1888 at 5s.	12	5	0	surer's hands...	13	12	4
	<u>£19</u>	<u>0</u>	<u>0</u>		<u>£19</u>	<u>0</u>	<u>0</u>

We have examined the Hon. Treasurer's accounts and found them correct in all respects.

R. THEODORE STACK, M.D.

A. W. W. BAKER, M.D.

January 26th, 1889.

The treasurer's report was read by R. HAZELTON, F.R.C.S.I., Hon. Treasurer, and J. CLOUGH CLARKE proposed and G. M. P. MURRAY seconded its adoption; the motion being put was carried unanimously.

R. H. MOORE moved and DANIEL CORBETT jun., seconded that the most cordial thanks of the members of the Irish Branch of the British Dental Association be given to the Provost and Fellows of Trinity College Dublin, the President and Council of the Royal College of Surgeons in Ireland, the Senate of the Royal University of Ireland, the Professors of the School of Physic, Trinity College, the Commissioners of Irish Lights, the Members of the Dublin Art Club, the Secretary of the General Post Office, Dublin, Messrs. Arthur Guinness, Son & Co., Limited, Mr. John R. Wigham, J.P., and Dr. George F. Duffy, for their valuable aid and co-operation in the late successful meeting of the British Dental Association in Dublin, August, 1888.

R. T. STACK, M.D., moved amendments to the bye-laws, of which notice had been given, and which had been already considered by the Council and recommended for adoption. The adoption of the proposed amendments was supported by S. G. Reeves, L.D.S., and A. J. Watts, L.D.S., and carried unanimously.

Robert Henry Moore, F.R.C.S.I., was elected President; J. Clough Clarke, L.D.S., President-elect; S. F. Thomson, Hon. Treasurer; W. Booth Pearsall, F.R.C.S.I., Hon. Sec. The following were elected Members of Council: J. J. Andrew, W. H. Elwood, J. McStay (Belfast), W. C. Corbett (Cork), A. W. W. Baker, Daniel Corbett, Daniel Corbett, jun., R. Hazelton, G. M. P. Murray, F. Ryding, C. Wall (Dublin), G. F. Hare (Limerick), and Samuel Smyth (Londonderry).

The PRESIDENT, having announced the due election of the Officers and Council, proceeded to deliver his valedictory address:—

GENTLEMEN,—The “Ides of March” approach, and the time has arrived when I must allow the presidential mantle of my dignity to fall from my shoulders—to be assumed by one infinitely more worthy to wear it; but ere I accept the subordinate position as your ex-President, I must call your attention to what has been done by the Irish Branch of the British Dental Association during this the first year of its professional existence, and now about to close.

The events of last August are too fresh in your memory to require of me any elaborate detail. You will agree with me in stating that we of the Irish Branch of the British Dental Association gave to the parent Association a convincing proof of how intimately we sympathise with them in their efforts to elevate the status of the dental profession, and maintain it in the proud position it is entitled to occupy in connection with medical science.

We of the Irish Branch have done much, but more remains to be accomplished, towards cleansing that “Augean stable” of humbug and quackery which is permitted to spread its mephitic influence amongst the members of our profession, thereby destroying that public confidence in the honesty and ability of the Irish dental practitioner, which, I fearlessly assert, he is justly entitled to.

Hitherto, I regret to say, we have been rather apathetic in our professional progress, and indulged more in the *laissez-faire* than seemed conducive to our interests. We allowed others to work, and we were content to accept the profit of their labour. In this way our transatlantic brethren have taught us a lesson we would do well to imitate. Their persevering industry is untiring, with the result that the properly qualified American dentist is now supposed to be super-excellent in his calling.

Now, gentlemen, whilst I am the last to ignore the merits of my

brother practitioner on either side of the Atlantic, I do confidently state that our native talent, when properly trained and developed through education and study, is capable of as great achievements as that of any nation on the surface of this globe ; but to succeed we must labour perseveringly and systematically. Let us fix on one idea and endeavour to attain it. It is the greatest of all mistakes to do nothing because you can do little. There are men who are always clamouring for immediate and stupendous effects, and think that virtue and knowledge are to be increased as a tower or a temple is to be increased, where the growth of its magnitude can be measured from day to day, and you cannot approach it without perceiving a fresh pillar or admiring an added pinnacle.

This seems to me a fitting opportunity to draw a comparison between the dental practitioner of the past and present generations—my lengthened experience enables me to do so with illustrative effects. To-day our professional warfare is conducted with similar weapons ; superiority in design and strategy as regards our practice will alone decide the issue ; no accidental circumstance can alter the result. Our conduct must be unimpeachable and our workmanship faultless.

How different was the state of things fifty years ago ! Then competition was unknown, except for the unprincipled charlatan. His reign in the locality he invaded might prove lucrative, but it was ever a short one—when the half-educated dentist was left in possession of the field, to pursue his calling in freedom. I recollect when a prosperous dentist of this city spent many valuable hours of the day in fiddling and buffoonery, and his evenings in boisterous conviviality ; the junior practitioner could only follow such an example, in the absence of any incentive to the acquisition of practical and useful information. It was then the habit of the young dentist, when he was lucky enough to have had a prosperous day, to summon his boon companions to the festive board, and in a true convivial spirit earn that popularity upon which he mainly relied as a means of advancement.

I well remember an occasion when I was assisting at one of those "Noctes Ambrosianæ," listening to advice delivered in these words :—

"Rail no more, ye learned asses,
Against the joys the bowl supplies ;
Sound its depths, and fill your glasses,
Wisdom at the bottom lies.

Fill them higher still, and higher ;
 Shallow draughts perplex the brain.
 Sipping quenches all our fire—
 Bumpers light it up again.
 “ Draw the scene for wit and pleasure—
 Enter jollity and joy ;
 We for thinking have no leisure—
 Manly mirth is our employ.
 And since in life there's nothing certain,
 We the present hour engage ;
 And when death shall drop the curtain,
 With applause we'll quit the stage.”

—OLD SONG.

What a different state of things now prevails ! “ Fair science ” now presides at our social gatherings. The “ glass ” we delight in is found in the microscope, and the sound most pleasing to our ears is often conveyed through the telephone. But I must not indulge my “ *Cacoethes loquendi* ” at the expense of your patient endurance. I will therefore content myself with entreating you to work steadily, perseveringly, and industriously—not only in your own individual interest, but also in that of your professional brethren. Let true nobility of principle ever influence your action, and then —

“ You will count that day lost whose low descending sun,
 Views from thy hand no worthy action done.”

The PRESIDENT having moved into the chair,

Dr. R. THEODORE STACK begged to propose a resolution of thanks to the retiring President. He need not remind the members how adequately he had discharged the duties and maintained the dignity of his position. Called to be our President in the infancy of our Branch, he had guided us through the initial stages of our formation and launched us forth a promising section of the parent Association. And in addition to this he conducted to a most successful issue the meeting in Dublin, last autumn, of the British Dental Association. Already occupying a position in the front rank of the dental profession, Mr. Corbett had nothing to gain by taking up these somewhat onerous duties. He could look back through a long vista of years on a life honourably spent in the conscientious discharge of his professional work. Since the passing of the Dentists Act, in 1878, he had given a most active and sympathetic support to the development of dental education and the improvement in culture and scientific and practical attainments of the

rising generation of dentists. Speaking for himself, he felt bound to say that he considered Mr. Corbett's career most worthy of imitation, and for their Branch, that they felt proud of having had Mr. Corbett as their leader and representative during the past year.

Mr. W. BOOTH PEARSALL seconded the resolution of thanks to the outgoing President. On being put to the meeting, it was declared carried unanimously.

A paper on "Abscess of the Antrum" having been read by Dr. A. W. W. Baker (which appears as an original communication in the present number), a discussion followed in which Dr. Stack, Mr. J. J. Andrew, and Mr. W. Booth Pearsall took part, and Dr. Baker replied.

Midland Branch.

AN informal meeting of members and friends will be held at the Swan Hotel, Bolton, on Saturday, Feb. 23rd, commencing at 6 o'clock. Mr. W. E. Harding will communicate his experience with the "Electric Motor," and also furnish some "Incidents of Practice." Mr. R. Edwards will exhibit and explain Dr. Bonwill's Articulator. Mr. T. Murphy will exhibit a very interesting case of Replantation. The secretary will give a fact or two in relation to the Register. Tea will be provided at 5 o'clock—2s. 6d. each.

The annual meeting of this Branch takes place in Liverpool, about the third week in May. Members desiring to read papers, or having any matter to communicate, are invited to make their wishes known as early as possible.

W. H. WAITE, *Hon. Sec.*

6, Oxford Street, Liverpool.

Southern Counties Branch.

THE next Meeting of the Branch will be held at the Town Hall, Brighton, on Saturday, February 23rd, at 8 P.M. The order of proceedings will be as follows:—

2.30 P.M.—Museum Committee for Annual Meeting.

3.30 P.M.—Executive Committee for Annual Meeting.

5.0 P.M.—Council Meeting of Branch.

6.0 P.M.—Dinner.

7.30 P.M.—General Committee for Annual Meeting.

8.0 P.M.—Ordinary Meeting.

Papers have been kindly promised by Walter Harrison, Esq., L.D.S.Eng., D.M.D.Harv., "On Temporary Fillings," and James Rymer, Esq., M.R.C.S., L.D.S.Eng., "On some Characteristic Changes in Teeth dependent upon General Diseases."

Members wishing to be present at the dinner are requested to intimate their intention before February 20th to Mr. J. H. Redman, 61, Old Steine, Brighton, in order that suitable accommodation may be provided.

The Secretary will be glad to hear from Members who are willing to read papers at the Annual Meeting of the Branch at Tunbridge Wells, or later on in the year; and would also be much obliged if those Members who have not already returned the Guarantee Subscription Forms would do so at once, in order that he may place the result of the appeal before the forthcoming meeting.

MORGAN HUGHES, *Hon. Sec. S.C.B.*

4, Wellesley Villas, Croydon.

The Benevolent Fund.

THE following new Subscriptions and Donations to the Benevolent Fund of the British Dental Association have been received by the Treasurer since December 1st, 1888:—

Subscription.

Ladmore, E. J., 149, Grosvenor Place, Manningham Lane, Bradford	£1	1	0
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Donations.

A Friend	£0	5	0
Mallan, G. Prescott, 30, Monmouth Road, Westbourne Grove, W. (in addition to subscription)	2	2	0
Proceeds of Art Union at Dublin Meeting, per W. Booth Pearsall	...	...	...	...	...	...	50	0	0
Collected at the Meeting of the Irish Branch of the British Dental Association, Dec., 1888, per W. Booth Pearsall	...	...	...	...	...	...	2	8	0
Collected at the Meeting of the Irish Branch of the British Dental Association, Jan., 1889, per W. Booth Pearsall	...	...	...	...	...	...	2	13	0

ORIGINAL COMMUNICATIONS.

The Operative Treatment of Hare-Lip.*

BY JAMES WHITSON, M.D., F.F.P. AND S.G., F.R.M.S.

SURGEON TO THE DISPENSARY OF ANDERSON'S COLLEGE; LATE EXTRA
DISPENSARY SURGEON, GLASGOW ROYAL INFIRMARY.

MR. PRESIDENT AND GENTLEMEN,—The congenital deformity of hare-lip is one which has at all times been of interest to the practical surgeon, not only from the nicety of the operation required for its removal, but from the fact that different ways of performing it have been recommended with the view of improving the result, and consequently obtaining the nearest approximation to the normal and healthy standard. Of the various methods which have from time to time been brought under review, each has had its advocates, who, in this as in other matters, have claimed for their own mode a distinct pre-eminence over the rest.

I do not in the present paper propose, nor would it be advisable, to lay down any definite or hard-and-fast rules in regard to the time best suited for operating. Such a period cannot be decided upon by any definitely recognised or universal law. It must be fixed by the surgeon in charge of the case, who ought to weigh thoroughly in his own mind the individual as well as the distinctive circumstances appertaining to, and therefore directly bearing on each, and, having discussed these to the best of his judgment, act in accordance therewith. Some writers are in favour of a very early interference; others object to it, and prefer a later. For my own part I would counsel you, *cæteris paribus*, to steer a middle course, as you all know it is advisable to avoid extremes. There may be drawbacks to an operation during the first six weeks of life, but these are more than counter-balanced by the advantages which follow in its wake. The chief factor we must consider is the state of the general health. If this be good, what possible objections can there be to the prompt adoption of remedial measures? In my opinion, none, and I would urge you, gentlemen, not to let a favourable opportunity slip, for if once gone it may not be easily recalled, or only after a lengthened interval. The parts immediately involved are then in a tolerably plastic condition, the patient is comparatively easy to manage—or perhaps it would be more correct to say, less capable of offering

* Read before the Glasgow Dental Students' Association.

resistance, than when older—and beyond a doubt delay, with its many troublesome sequelæ, is in this way often productive of harm.

Where the hare-lip is complicated with cleft palate, the early removal of the former is one of the greatest adjuvants towards the future and successful treatment of the latter, inasmuch as the steady compression of the united lips exercises a wonderful effect in approximating the edges of the fissure towards one another. As strongly illustrative of this, mention is made by Dr. Wheeler,* the well-known Dublin surgeon, of an instance where the mesial lines of the palate were so widely apart that the mother could pass her fingers between them, but in three years after the junction of the lips had been effected they would only admit the edges of a sheet of paper. Mr. Butcher† also refers to the same thing, and points out that, by the gradual closure in this way of fissures in the palate, bad habits of speech are, for the most part, averted, or at least greatly ameliorated.

Should you be called upon to treat a child who is losing flesh by the milk running out of the nose, then it is your clear duty to take immediate steps for the correction of the defect, and delay only diminishes the chance of a primary union, because the patient is gradually growing thinner, and steadily but surely becoming less able to withstand any shock to, or cope with any strain on, the system. On this point all writers of any standing are agreed, and the statement can easily be confirmed by a reference to the best works on the subject.

Some surgeons would not touch a case till the patient was several years of age. Well, gentlemen, do not follow their example. Little good is served by it, nor can a course like this be productive of benefit in any degree commensurate with such prolonged delay. No doubt it may be said with perfect fairness that there is one advantage due to age which is certainly present when operating in these advanced cases—the increased thickness of the labiæ; consequently there are broader surfaces to appose, and breadth, as you are aware, not only gives, but adds to the stability of every structure. Against this, however, it may be urged that by the time a few years have elapsed the lips are certain to have lost much of their pristine plasticity, and to have

* "On the Operative Treatment of Hare-Lip," by W. J. Wheeler, M.D., *Dublin Journal of Medical Science*, January, 1880, p. 29.

† "Essays and Reports on Operative and Conservative Surgery," by Richard G. Butcher, p. 655.

Dr. Whitson on the Operative Treatment of Hare-Lip.

Fig. I.



AA.—The way to do it.

BB. The way NOT to do it.

Fig. II.



Fig. III.



Fig. IV.



Fig. V.

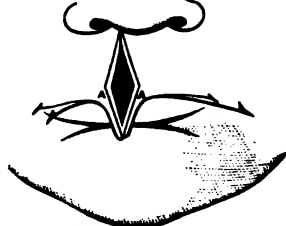


Fig. VI.

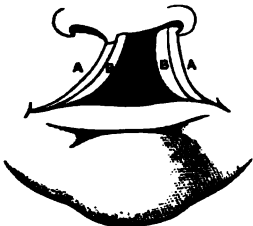
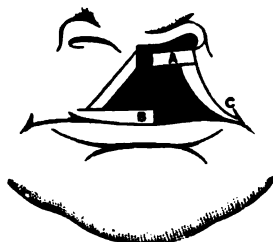


Fig. VII.



AA.—Lines of Incision.
BB.—Prolabium.

A.—Flap on upper aspect to be retained if necessary.
B.—Flap brought down, to be carried along to point C.



acquired decided habits as well as expressions peculiarly their own—both difficult of eradication—while the patient is possessed of considerable physical energy combined with no little strength of will, and is only too capable of struggling when it is essential for his future welfare that he should not do so. In addition to all this, it is easy to see that, when operated on in an early stage, the mere fact of the parts having been assigned their respective loci and distinctive spheres of action will tend to assist in the restoration of the natural appearance, as well as to facilitate the subsequent moulding of the labial outline to the desired standard.

It is beyond the scope of the present paper to discuss seriatim the different methods of procedure which have from time to time been devised for the cure of hare-lip, and I now propose to give you a few useful hints in regard to the operation generally, which, if acted upon, will, I trust, prove beneficial, ever bearing in mind the important fact that certain circumstances, taken in conjunction with individual peculiarities, alter the aspect of particular cases, and have an independent influence over them.

Our first duty before proceeding to operate in a case of hare-lip, is to envelop the child in a large towel, in order to prevent any movement of the arms. This having been accomplished, we next proceed to free the lip from the gums, the thorough performance of which is of the utmost consequence and should be carefully attended to, in order that the apposing surfaces may come easily together. In doing this, gentlemen, I would recommend you to use a small knife. It is quite as effectual as a larger one, and adapts itself more readily to the hand as well as to the confined and cramped area in which we are here compelled to work. The edge of the blade should be directed towards the upper maxilla, and away from the lip itself. In this way the greatest amount of tissue is conceded to the latter, so that its thickness and consequent vascularity are unimpaired, while hæmorrhage is, by conformity to this rule, almost *nil*. If there be any projection of the intermaxillary bones which it is impossible to utilize, it must be removed; but for the patient's sake it is advisable to take away as little as is compatible with the satisfactory reduction of the malar displacement. Few speak more forcibly on this point than the late Dr. Maurice Collis* of Dublin.

* "The Æsthetic Treatment of Hare-Lip, with a Description of a New Operation for the more scientific Remedy of this Deformity," by Maurice H. Collis, M.D., *Dublin Journal of Medical Science*, vol. xlv. p. 298.

Doubtless it is comparatively easy to snip off any undue prominence in connection with the upper jaw,* but it is well to remember that by so doing we deprive the soft parts to a greater or lesser extent of their natural support, that empty spaces are not easily filled, and that teeth once sacrificed can never be replaced. A little time and pains, as well as conservative skill, may therefore be ungrudgingly bestowed here, not only for the credit of the profession but for the patient's future comfort and improved powers of articulation. In some instances the dislocated portions may be forced into favourable position and wired together. When this can be done, it is well to carry it into practice.† The younger the child the more easily will it be managed—a convincing argument for the adoption of early remedial measures.

What may be called the third and most important step in the operation is the cutting of the flaps; but before attempting their scission it is a good plan to apply a suitable pair of clamps for the prevention of hæmorrhage during this stage and throughout the subsequent process of suturing the newly freshened surfaces. I will now pass round one or two specimens of these, and you can judge for yourselves which are the best to work with. Mr. Thomas Smith gives a sketch of a pair in an old number of the *Lancet*,‡ but they appear to have two defects. The first is that they exercise far more pressure than is requisite for the complete command of the coronary vessels, with no means of graduating it; and the second is that from their shape they interfere with the free play of the surgeon's hand.

Another pair§ are too heavy and are apt to be a hindrance from their bulk. Here are a pair of clamps which Messrs. Maw, Sons, & Thompson, the eminent instrument makers of 7, Aldersgate Street, London, made for me last year. I have found them, from repeated trials, to be admirably adapted for attaining the end we have in view (Fig. 8). They are light and handy, while, owing to

* Mr. Wheeler's forceps are very well adapted, from their peculiar shape, for removing any projection of the malar bones.

† Mr. Butcher has devised several instruments for partial section of the bones. See his work "On Operative and Conservative Surgery," p. 715.

‡ "Clinical Papers on the Surgery of Childhood," by Thomas Smith, F.R.C.S., *Lancet*, 28th December, 1867, p. 797.

§ Messrs. Maw, Sons, & Thompson's Book of Illustrations for 1882, p. 122, Fig. 100. Mr. Smith's instruments just referred to are depicted on the same page, Figs. 98 and 99.

their construction, they are, when in use, completely out of the way and do not impede the operator in the slightest. No more compression than is absolutely necessary—a principle of cardinal importance—is applied by means of the screw (C) through the medium of the blades (A and B).

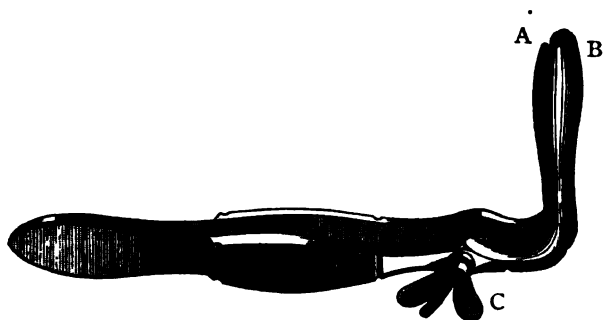


Fig. 8.—Hare Lip Clamps (Author's).

In order to facilitate the proper performance of flap section, you will find it advisable (the clamps being accurately fixed) to make use of two pairs of fine artery forceps, one being placed at the nasal, while the other grasps the lower extremity of the fissure. In this way the labia can be put lightly on the stretch, which renders the requisite incising easier, cleaner, and neater. It is the general custom to pare the edges with a knife; but there are many, including Dr. Wheeler,* Mr. Butcher† and M. Malgainge,‡ who advocate the use of scissors specially devised for the purpose, and who claim for these a superiority over other instruments. Certainly the results of Dr. Wheeler's cases, as shown in his paper just alluded to, are excellent, and to all appearance the end amply justifies the means. I now beg to hand round for your inspection the various appliances§ used by him in the cure of hare-lip. The scissors are of two kinds, straight and curved, the latter being beautifully designed for the execution of a concave incision.

* *Dublin Journal of Medical Science*, January, 1880, p. 40.

† "Essays and Reports on Operative and Conservative Surgery," by Richard G. Butcher, p. 658.

‡ *Ibid*, p. 668.

§ My best thanks are due to Mr. D. E. Corcoran, instrument maker, Dublin, for the excellent specimens of these with which he has supplied me.

By the kind permission of Dr. Wheeler, I am now enabled to give woodcuts of both.

The curved are made for both sides. The specimen shown is for the right side of the cleft.

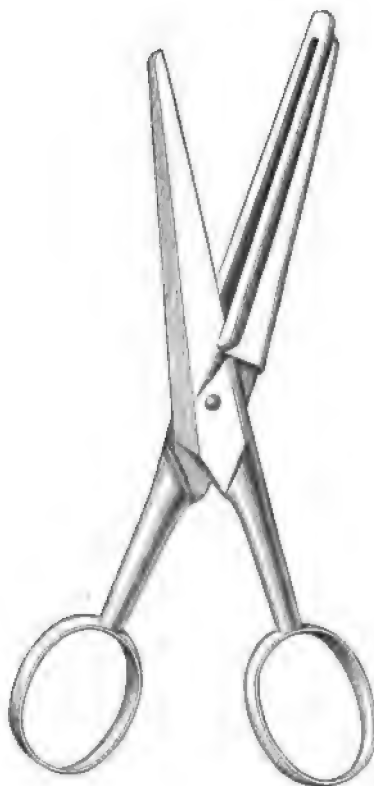


Fig. 9.—Straight.

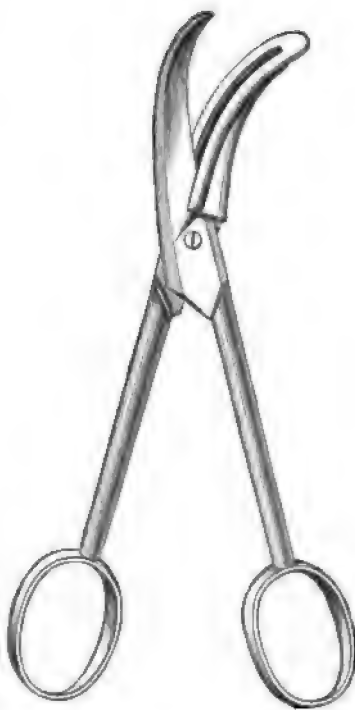


Fig. 10.—Curved (open).



F. 11.—C
(closed,
ing conc

Mr. Thomas Smith speaks highly of scissors,* and suggests that, before denuding the edges, the centre of each margin of the cleft should be forcibly drawn out by means of a pair of artery forceps, with the view of imparting a concave aspect (); but the curved

* "Clinical Papers on the Surgery of Childhood," by Thomas Smith, F.R.C.S., *Lancet*, 28th December, 1867, p. 797.

scissors of Dr. Wheeler effect this without straining or pulling on the labiæ—always an undesirable object at this juncture because of our inability, under such circumstances, to gauge accurately the amount of tissue to be removed. If you use a knife, a sharp tenotomy one is as good as any. It should be made to transfix the entire thickness of the lip close to the nose, and be carried gradually downward as far as is considered necessary, when it can be reversed and, if so wished, the flap disconnected on its upper aspect. In the performance of this, gentlemen, I cannot too strongly inculcate on you the necessity of removing a good slice of tissue, and avoiding the mistake, which nearly all beginners make, of timidly running the knife down by the junction of the red margin. In Fig. 1 (frontispiece) I have endeavoured to lay special stress on this point, by portraying in red (lines B, B) the route too often pursued but which ought to be carefully guarded against in cutting the flaps. On every occasion keep the important axiom prominently before you, that it is better to take too much than too little ; and if you are not afraid to go widely clear of the probal edges of the fissure (lines A, A, Fig. 1.) your result will assuredly be better, looked at from every point of view, operatively, relatively and prospectively. There are, by these means, broader surfaces to bring together, which admit of a facile and accurate apposition. The chances of permanent union are augmented, because there are a greater number of vascular points capable of throwing out branching loops with their fellows of the opposite side—a most desirable object because of the certain maintenance of vitality between the contiguous sides which must accrue from the establishment of a collateral circulation. The sutures obtain a better grasp of the structures through which they pass, and, from the stable nature of the parts in question consequent upon their breadth, there is little likelihood of any after displacement taking place. The vertical depth of the lip is also greater where a broad margin has been removed, and therefore there is less fear of the dreaded notch showing itself by-and-bye. This point is clearly brought out by referring to the dotted red line running between the points B and A in Fig. 1. In our incisions, if we adhere to the course of the black lines A, A, we shall in all probability be gratified with securing a near approach to the desired standard (Fig. 2.), because the two points A, A, are on a distinctly lower level than those of B, B. The corollary follows, that if we select the lines leading to the former (A, A), we must

obtain the greatest possible length of lip, and, with ordinary precautions in the subsequent apposition of the cut surfaces, a notch is impossible. On the other hand, if we traverse the tracks of the red lines (B, B), the furrow cannot fail to become apparent from the marked slope which prevails along the prolabial edges from B to A, as illustrated by means of the dotted red line; and though we availed ourselves of the parings, it would still exist, for the reason just stated (*vide* Fig. 3.). A reference to the last figure will show that the upper and under lips cannot meet on account of the triangular space present between them and which is certain to interfere with the pronunciation of the labial sounds, more especially of such letters as *b* and *p*. The unsightly vertical dip is also avoided, because the parts on either side of the black lines (A, A, Fig. 1.) are of uniform thickness and more likely to present a smooth after outline than when the labial depth, viewed antero-posteriorly, gradually increases towards the angle of the jaw, as it must do when the knife or other cutting medium has closely embraced the line of the red margin (B, B, Fig. 1.).

Having cut, but not severed, your flaps, the problem for us to solve is, How are we to dispose of them? Are they to be detached *in toto*, or is it advantageous to retain them; and if we choose the latter alternative, what particular method are we to adopt of utilizing them? Well, gentlemen, though the subject has given rise to keen controversy, I would counsel you not to throw away the parings, but to turn them to account, thus rendering them subsidiary to the general weal. This view is strongly supported by Dr. Maurice Collis in a very able article,* published some years ago.

The particular form of the operation (Fig. 4.), of which Malgaigne† in France and Samuel Smith‡ in England were the leading exponents, consists in turning down both flaps (A, A, Fig. 4), uniting their cut surfaces to one another, and docking any redundancy with the scissors. One objection to the foregoing *modus operandi* is, that when completed, this pendent tongue must be liable to constant movement owing to contact with the under lip (*see* Fig. 5). A second is, that the spoon with which the child

* *Dublin Journal of Medical Science*, May 1868, vol. xlv. p. 294.

† See Mr. Francis Mason's work on Hare-Lip and Cleft Palate, p. 37.

‡ Mr. Smith practised in Leeds. An obituary notice of this surgeon will be found in the *Lancet* of 14th December, 1867, p. 752.

is fed is apt to push the pedicle either to one side or the other, and the milk is inclined to penetrate between its walls.*

A better plan than the latter (*vide* Fig. 6), and one which, in my opinion, gives a finer, as well as more graceful finish, is to bring down a good thick flap from one side (B, Fig. 7), carry it along and unite it by a species of half mortise to the lower border of the other (C, Fig. 7), the addition of which imparts an even and natural appearance, counteracting the tendency towards the formation of a notch.† In this way the vitality of the cicatricial surfaces is augmented, and the prospects of their union by first intention are thereby considerably strengthened.

We will now suppose the flaps cut and ready for allocation to their respective sites. The next question, therefore, comes to be, What kind of suture shall we call into requisition for the approximation of the recently pruned edges? The metallic, consisting for the major part of silver wire, chromicised catgut, horse-hair, silk, the bead or quilled,‡ and the hare-lip needle, have all been tried and advocated. I would advise you to give a preference to either of the first two. Silver wire,§ though not without drawbacks, makes an excellent suture, and a tolerably thick thread should be selected. It is less liable to cut when not too fine, it fulfils its mission better, and forms a fast knot, the ends of which should be laid flat in order to lessen their chance of catching. Chromicised catgut acts beautifully and needs no further care. It possesses an inherent adaptability which wire, however ductile, can never acquire. Horse-hair,|| though by no means destitute of advantages, is not to be specially lauded. Owing to its fineness, it is somewhat prone to cut if subjected to any strain; the pliancy of gut is wanting, and, unless care be taken in its ligation it is almost certain to be laxly done and thus slip. On the other hand,

* To be avoided in great measure by the use of collodion. As a general rule, the stitches holding the prolabium together should be removed a day or two after the others. If gaping takes place between the pedicular surfaces, it is not only difficult to remedy, but it has an injurious effect on the main line of union.

† Mr. Butcher's work on Surgery, p. 668.

‡ Recommended by Mr. Brooke, *Lancet*, 21st May, 1859, p. 509.

§ Used by M.M. Giraldes and Verneuil. For further particulars of the views held by these gentlemen on this suture, see *Medical Times and Gazette*, 27th August, 1864, p. 226.

|| A continuous suture of horse-hair clamped with a shot at either end is recommended by Mr. Thomas Smith, *Lancet*, 28th December, 1867, p. 798.

no stitch is more easily withdrawn, and, unless forced by tension to eat its way towards the exterior, little trace of its presence can be afterwards seen. I have found silk best suited for approximating the prolabium, and in this capacity you will find it handier than hair. The needles were at one time universally approved of, but they have to a great extent been discarded by most surgeons. They leave a mark necessarily enlarged by tension and in proportion to the length of time they are allowed to remain *in situ*. The compression exercised by them is apt to trespass upon the vitality of the neighbouring parts, while the thread which is wound round them conceals the lips, becoming, when soaked with blood, a stiff and unyielding mass.

Should you be forced in an emergency to try the needles, you will find it convenient, after having placed them in position, to appose the raw surfaces before putting on the silk; and the latter ought to be of a coarse kind in order to spread the area of pressure and minimize ulceration. It is needful to withdraw the pins at the end of forty-eight or seventy-two hours, certainly at the latest on the fourth day, which procedure alone bears strong testimony in favour of their rejection, because union is at this time by no means firm and any untoward movement may react prejudicially. Under these circumstances it is desirable, so long as cohesion is progressing between the labiæ, to have a class of sutures at our command which will enable us to keep the parts at rest and evade taxing the elasticity of the commissure. Furthermore, two needles cannot divide the strain so equably or afford the relative support of three stitches of wire or gut.

In passing the sutures, a curved needle is the best to work with. It is preferable to a straight one, because it adapts itself more readily to the natural conformation of the parts, and it should be made to penetrate the entire thickness of the lip, with the exception of the mucous membrane.

In its manipulation a needle holder* will assist you greatly. The needle of Lister, with a groove above the eye into which the suture is designed to sink, is the most convenient for this purpose.

* The simpler the better. Complicated instruments are to be avoided, from their liability to go wrong, and from the length of time occupied in their frequent readjustment. Those which grasp the needle at right angles are to be preferred to those which seize it lengthways.

Fig. 12 exemplifies forcibly the imperfection attaching itself to the old way, while in Fig. 13 we have a good illustration of the method which it is obviously advantageous to pursue. You will observe that by this little manœuvre (Fig. 13), there is no impediment to the onward passage of the needle, a matter of paramount



Fig. 12.—Showing Old Mode of Threading Needle with Projection at Eye.



Fig. 13.—Lister's Needle Threaded. Suture compressed into groove above Eye.

value, because it lessens the aperture which must be made in the tissues, and at the same time conduces to the tractive power of the sutures after these are made fast. The tearing of the doubled wire about the eye of a needle often causes a laceration instead of a puncture, and a minute rent is sure to widen still further when the stitches are tightened.*

The canulated needle of Dr. M'Lellan of Philadelphia (see Fig. 14) might be tried, of which, through the kindness of that gentleman, I am now able to show you a specimen.

The inventor claims that the handle offers firm support to the fingers of the operator, while great accuracy in the introduction of the sutures and complete exactness in the apposition of the parts are attained.†

The highest or nasal suture is usually passed first, and no pains should be spared to see that it fulfils its function efficiently, for if there be any relaxation here the lip has in consequence an inclination to be drawn upwards. The second is placed at the opposite extremity, and one or two follow between these. The

* The truth of this can be demonstrated by punching a hole in either paper or cloth, when it will be found that a cleanly cut aperture possesses a vastly increased power of resistance as compared with a ragged or torn one.

† A useful instrument of this kind is also made by H. Galante & Fils, 2, Rue de l'Ecole de Medicine, Paris. *Vide* "Catalogue Illustré des Instruments et Appareils de Chirurgie," de H. Galante & Fils, p. 84, Fig. 237.

sutures may with advantage be inserted from alternate sides. In this way the balance of the lips is more equally sustained. Lastly, a sufficient number of threads of fine silk * can be set aside for the prolabium. The sutures should not finally be secured till all are in their proper places, and care must be taken to see that the line of union reveals a fair and smooth outline. At this juncture you will find the clamps invaluable, for by their co-operation it is easy to perceive whether everything is on the same plane, and if not, very little trouble will soon create a change for the better. In many cases of hare-lip a thick cord is visible running down the commissure. This arises from the inaccurate disposition of the labial margins, one being allowed to remain at a higher level than the other.

Many are in the habit of using a strip of plaster, extending from one cheek right round to the other, to relieve tension. It certainly does so, but it soon becomes soiled from the milk with which the child is fed, and the skin, in consequence, in the neighbourhood, becomes excoriated. I have frequently tried plaster but have obtained excellent results without it. The late Dr. James G. Lyon,† a surgeon gifted with rare taste and the highest manipulative skill, held the opinion that, so far from serving a useful purpose, plaster had a reverse tendency. Hainsby's truss‡ which I now show you, has all the advantages of plaster with none of its



Fig. 14.—Dr. M'Lellan's Cannulated Needle, $\frac{3}{4}$ size.

* Mr. Snowdon, instrument maker, Philadelphia, has recently supplied me with beautiful specimens of iron-dyed silk. These he manufactures in fourteen different sizes, and it frequently saves confusion in operations such as this, more especially in that of cleft palate, to work with threads of different colours. It is not unlikely that the hæmostatic properties of the iron may in great measure be communicated to the silk, and thus render it of double service. It might be tried, for example, in the strangulation of nævi, and would certainly be a more elegant method of procedure than the one proposed by Mr. Erichsen, of staining one-half of the ligature with ink in order to distinguish it from the other. See "Science and Art of Surgery," (1869), by J. E. Erichsen, vol. i. p. 652.

† Died, to the regret of all his friends, 6th January, 1883.

‡ Care must be taken to see that it fits accurately.

drawbacks. It may with benefit be worn for some time before operating.

Some surgeons are in the habit of keeping the patient under the influence of opium during the progress of resolution, and the practice is well worthy of an extended trial, though care must certainly be exercised in the exhibition of such an agent. Mr. Butcher* commends the custom, and illustrates by numerous cases the efficacy of this drug in partially narcotizing the child; but it ought always to be borne in mind that it is of immense assistance during the performance of operations generally, and strengthens in a remarkable degree the power of chloroform or ether, if an opiate† is given shortly before their inhalation is commenced. The patient, under this line of treatment, becomes peculiarly susceptible to the action of an anæsthetic, and at the same time remains long as well as deeply under its sway‡—a point of extreme practical value, for it permits the surgeon to proceed through the operation, with less interruption than when the effect of the chloroform is constantly passing off, thus demanding its fresh administration, and entailing, as a matter of course (until unconsciousness is reproduced), a complete cessation in the onward proceedings.

Operations about the mouth have always been tedious from this cause, and any method which renders them less so is one which ought to be cultivated.§

* "Essays and Reports on Operative and Conservative Surgery," by Richard G. Butcher, p. 712.

† In adults this is best given hypodermically, and for two reasons. A less dose suffices (from $\frac{1}{4}$ to $\frac{1}{2}$ grain), and it acts on the system more quickly than when taken by the mouth. The tartrate of morphia is more suitable than the acetate for subcutaneous injection, as it is soluble in water. Atropine ($\frac{1}{100}$ grain) may with benefit be added to the morphia.

‡ Opium possesses, in addition to its narcotic properties, a stimulating effect on the heart, thus counteracting the vascular depression usually caused by the inhalation of chloroform.

§ Dr. William Macewen obviates this difficulty in adults by administering chloroform continuously through tracheal tubes introduced by the mouth. These were specially designed by himself to meet exigencies of this description, and possess at the same time the additional advantage of preventing blood from getting into the respiratory tract. To pass these neatly, however, considerable practice is necessary, and, from the confined area and want of room generally which confronts us here, I fear that this method, valuable though it be, is mechanically impracticable in young children. Dr. Macewen has tried it successfully in cleft palate, but the space at our command is much greater there than in hare-lip.

In removing the stitches * you will find it expedient to put the patient under chloroform. By its aid muscular resistance is overcome, and you can thus attain your object without endangering the safety of the recent union. Should you find, either before or when withdrawing the sutures, that any portions of the cut surfaces have failed to become adherent, do not interfere so far as operative measures are concerned, but postpone the rectifying of the defect till afterwards.† I have on more than one occasion seen attempts to close small apertures resulting in the separation of the whole newly united tract—an unpleasant consummation, for although the lips are successfully re-apposed, the result can never rank with one in which primary coalition has been secured.

Abscess of the Antrum.

By A. W. W. BAKER, M.D., F.R.C.S.I.

THE case that I have the honour to bring before the meeting is one of abscess of the antrum. Some years ago, at the Dental Dispensary at Dr. Steeven's Hospital, my father and I used to see a good many of these cases, but now they appear to me to have grown as rare as a popliteal aneurism. At all events, during the last ten years as surgeon to the Dental Hospital of Ireland, I have seen but three or four cases. Whether this falling off is due to the fact that persons suffering from abscess of the antrum seek relief elsewhere, or, as has been suggested by Mr. Salter, that they have really declined in numbers owing to the increasing attention which our dental organs have received of late years, I am unable to decide. At all events, I think the case which I am about to relate, if it has not the merit of being rare, has sufficient interest in itself and the points which it raises to justify me in bringing it under your notice.

J. D—, aged thirty-two, a healthy, well-nourished man, applied for treatment at the Dental Hospital on Oct. 23rd, 1887. Beyond suffering from a cold every winter, and having had some pleurisy on the left side, he never had any serious illness; there was no history of any venereal affection, and his family history was good.

* Sutures of wire may be withdrawn about the fifth day. Dr. Lyon advocated their being left in even longer.

† Hainsby's truss might here be made useful.

He stated that swelling of the right antrum began suddenly about ten years ago with sharp pain ; since then the swelling has never completely subsided, but gets worse when he has a cold in his head, and it is relieved by the discharge of offensive matter into his mouth. The right upper second premolar being diseased and causing pain, was removed two years previously at the Dental Hospital of Ireland. Subsequently he came under my care and I directed him to wash out his antrum with carbolic lotion, using a syringe and a catheter. This he did for some time through a fistula which existed into the mouth. Whenever this fistula closed up, the patient was in the habit of passing up a straw to clear it, and thus relieve the swelling. The discharge used to come away in the morning mixed with the remains of food. There was no discharge through the nostril, nor was the patient conscious of any peculiar smell in his nose. A fortnight previous to my seeing him the cheek was so swollen that the patient was unable to open his mouth and could only take teaspoonfuls of bread and milk ; this condition was relieved by a free discharge. I may remark that an attack similar to the one I have described used to occur about every three weeks.

On examining the patient I found that the right side of his face was markedly larger than the left, the pyramidal shape of the swelling indicating enlargement of the antrum, and the spot on the cheek—so well described by John Hunter—showing where the abscess would point if left to itself. There were two fistulae through which a probe could be passed for about two and a half inches, leading from the mouth into the antrum : one was situated at the outer side of the first right upper bicuspid, close to the attachment of the buccal mucous membrane : through this a few drops of purulent discharge were coming. The other opening was where the second right upper bicuspid had been extracted, and close to the distal surface of the first right upper bicuspid. The remaining teeth on that side were sound—in fact they were all present, with the exception of the second bicuspid. On testing the patient I found that he was unable to blow through the antrum into the mouth when the nostril was closed, indicating, of course, that the opening from the antrum into the middle meatus was stopped. My opinion at the time was that the patient's chronic abscess was most likely due to some small portion of dead bone, the result of the previous acute abscess, and that the most likely means of affording him relief was to make a free opening

for the double purpose of syringing and drainage. Accordingly, with the assistance of my colleague, Mr. Yeates, I made an incision connecting the two fistulæ, and joined this by two others so as to form a triangular opening in the space from which the second bicuspid had been extracted. At Mr. Yeates' suggestion, I then gouged away the alveolus with an enamel chisel, so as to secure a free opening. The antrum was then syringed out with a 2½ per cent. solution of carbolic acid, when a small portion of the crown of a tooth was washed out; this probably had been retained in one of the pockets so frequently formed by septa across the floor of the antrum. Iodoform was then blown into the antrum, and the wound plugged with a strip of lint to prevent its closing. The patient at once experienced a great sense of relief, and said he had not felt so comfortable for a long time, as after the operation all feeling of fulness had left his jaw and, to use his own words, "it felt quite supple." Two days afterwards there was no discharge, and the patient disappeared for a year, when he again turned up to tell me that he had been quite free from trouble ever since, with the exception that food lodges to a small extent in the opening which still exists into the antrum. I tried to get him to come to me to make a plate to cover this small opening, but living in the country he was not able to do so.

The history of this case is, I think, interesting from many points of view: first, showing how readily in those cases where the roots of teeth protrude into the cavity of the antrum suppuration of the dental periosteum may give rise to abscess of the antrum, for I take it that in this case the inflammation of the root of the second bicuspid gave rise to the original trouble, and during its removal—the floor of the antrum being perforated by its root—a small fragment of the tooth slipped into the antrum, and lodging in one of the pockets kept up the mischief. This, of course, is an accident that might happen to the most experienced operator, and occur even without his being aware of it. Secondly, it raises the question of the proper mode of dealing with a permanent opening into the mouth from the antrum, such as this patient has—whether we should attempt to close it by an operation, by the pressure of an obturator which would at the same time prevent food lodging there, or leave it alone. I think the answer hinges upon whether the normal opening into the cavity of the middle meatus of the nose is patent or not. If not, I think it is better for the patient to have the fistula into his mouth. Thirdly, there

is the interesting question of the best mode of opening an antral abscess. There are three ways proposed : either, having extracted the first molar, to perforate the floor of the antrum through its socket, or to pierce the outer side of the jaw above the alveolus, or, as has been recently proposed, to perforate through the nose anterior and below the normal opening. For my own part I prefer the second method, as giving the most room and being in every way more convenient, unless there may happen to be some special indication for the removal of a tooth and the perforation of its socket, or, as happened in my case, a pre-existing fistula elsewhere, and I would lay stress upon the necessity of having an opening sufficiently large to wash out the cavity thoroughly.

The importance of an early diagnosis in these cases cannot be over-estimated when we reflect on the effects produced upon the contents of the orbit by the pressure of a bulging antrum, to say nothing of fatal intra-cranial suppuration which has been known to follow abscess of this cavity. On the other hand, it is often a matter of difficulty to decide that pus is present in the antrum ; there may be an entire absence of all the usual signs—no bulging of the cheek or of the walls of the antrum into the mouth, no sense of distension, no appreciable amount of discharge into the nose, not even the dyspepsia relied on by Mr. Heath to tell the tale in these doubtful cases. Such a case came recently under the care of my colleague, Mr. Yeates, at the Dental Hospital, and knowing that I was interested in the matter he kindly asked me to look at it. If I remember rightly there was but a small amount of pus present in the nose, which was the patient's chief trouble. Here, of course, we had to decide in the first instance that the patient was free from ozoena by the facts that although the man himself was conscious of an odour, we were unable to detect any smell, and by the absence of any of the usual signs of disease of the nasal cavity.

However, as we may hope for a communication from Mr. Yeates himself on this subject at no very distant date, I will not anticipate it except by referring to this one fact in connection with it, viz., that having satisfied myself as to the presence of pus in the antrum I recommended the removal of the wisdom tooth which was extensively decayed. I was led to do this by remembering a very interesting specimen which my colleague, Dr. Stack, exhibited at our Annual Museum last August, which showed that it was perfectly possible for the wisdom tooth to perforate the floor of

the antrum with its roots—a fact which I don't think is generally recognised.

The sections of skulls which I pass round will, I think, give a better idea of the size and extent of the antrum than any description or diagram. I prepared them for my lectures last year at our school in connection with the Dental Hospital of Ireland, and I have found them very useful when speaking to the students on diseases of the antrum.

HOSPITAL REPORTS AND CASES IN PRACTICE.

Part of a Demonstration at the Dental Hospital.

BY CHARLES TRUMAN.

AT the last meeting of the Students' Society of the Dental Hospital, the reader of the paper for the evening chose for his subject that of Fractured Jaws. My name was down on the List at the Hospital to give a demonstration to the students on the same subject. I naturally read this paper with much interest as soon as it was sent to me. Some of my own methods, which I mentioned in my demonstration, are new and may, I think, be interesting to some of your readers. This subject of broken jaws is of importance to us at general hospitals. We strive to get a method arranged by which we can put up the fractured jaw permanently at once. We also strive that this method may be simple enough for the general medical practitioner to use. He cannot be expected to take a model of his patient's mouth, or to make a special splint to fit this model, so we say that he must call in a dental surgeon to help him to treat this case. As far as my experience goes, he does nothing of the kind; he continues to use an outside gutta percha splint and a four-tailed bandage, and is quite satisfied. An elaborate set of tools has been devised for making the splint at once by fitting it to the patient's mouth, and so doing away with the trouble of taking a model of the broken jaw. I do not think it will be found easy to induce medical men to use these tools, or to induce them to make internal splints for themselves. The patient must have to endure much unnecessary pain whilst the splint is being made and fitted to the broken jaw. The method that we find answers very well at St. Thomas' is to use Hammond's splint. This splint is the one adapted to the

largest number of ordinary cases. It should be made of tinned iron wire, for two reasons : it is cleaner and more pleasant in the mouth, and especially because it is so easy to solder. One of the greatest difficulties in making Hammond's splint has hitherto been the difficulty of soldering the ends of the iron wire. Generally the ends are brazed together, but this is not easy for most of us to do. Of course wire made of other metals can be used, but expense is a great object in treating hospital patients. The joint that I prefer and always use now, is one made by means of a short metal tube, into either end of which tube the cut ends of the tinned iron wire are inserted. In this way the ends of the wire are held together in the right position, whilst the ends of the wire and the metal tube are all soldered together. Pewter solder acts very well for this purpose ; it does not injure the mouth, and it is so easy to use. It makes a joint quite strong enough for what we want. The tube is made of very thin metal (any metal may be used that will solder readily and not injure the mouth). The thinner the metal used to make this tube, the less bulky the joint will be when the splint is finished.

Now I select five or six models of good sound young jaws with as many teeth in place as I can find. These models are to be all of different sizes. To each of these models is made one or more of Hammond's splints. Each splint is made fitting its model nicely. Thus we have a set of splints graduated in size from small to large. The medium sizes are found to be most useful, so more of these can be made than of the other sizes. Having ready by us sets of these wire splints, when a patient comes to St. Thomas' with a fractured jaw (I am speaking of the lower jaw, as it is so much more often fractured than the upper), we select out of our sets the splint which is nearest in size and best fitted for this particular case. Very soon, with a little bending and altering, the splint is made to fit the jaw and it is wired in, and the fracture put up in the usual way at once the first time the patient is seen. Silver wire is better for passing round the splint and teeth than iron wire, as it is tougher and will bear more strain and can always be obtained at a general hospital. The patient is put to no unnecessary torture, either by having a model taken of his broken jaw, or by having a wire splint made and constantly fitted to his mouth. The splint is ready, waiting for the patient when he arrives. The medical practitioner can have these sets of splints made for him ; he need not make them for himself. Then all the

delay of taking a model, casting it, cutting it up and putting it together in its normal position, and making a splint to fit this re-adjusted model, is done away with. I find that these splints fit the jaw very fairly, and as a rule the less they are altered in trying to make them fit the particular case the better. If it should happen that for a particular case no splint will fit, it is very easy to heat the joint over the flame of a spirit lamp, and thus unfasten it, cut out a piece of wire or alter the joint, and when it is right to resolder it.

It does not seem to me very much to expect of a medical man, that he should learn how to apply one of these splints, especially as he need have nothing to do with making them. Nor is he asked to take a model of his patient's mouth, which is altogether out of his province. He has the wire splints ready to his hand when the case comes to him. Then the patient has the great benefit of having the pain of his broken jaw relieved at once, going away after the first visit with the splint on and his broken jaw permanently put up.

A Cause of Unsatisfactory Results with Nitrous Oxide.

By JAMES RYMER, M.R.C.S. and L.D.S.Eng.

As many provincial dental surgeons are obliged to administer N_2O gas themselves, it is absolutely necessary that they should know the causes of the many complications which are roughly due to (a) *the condition of the patient*, (b) *impure gas*, (c) *faulty apparatus*. Knowing that several have been doing, that which I have recently discontinued; I wish briefly to narrate my practical case connected with the apparatus, hoping that others may benefit by it.

I have for some time been in the habit of storing my gas in a gasometer, and perceiving that the gas lost in bulk, I did as many others do, viz., suspended two extra small weights to the holder, to take any pressure off and so prevent waste. I noticed that a case or two did not go off very satisfactorily, so I carefully noted the index connected to my "holder." In a day or so I found that instead of any decrease, there was marked increase of gas in the "holder," so I knew at once that air had been sucked in, through one of the connecting pipes, &c., and so I was admini-

stering gas *plus* air. Since then I have discarded extra weights, and prefer to lose a small quantity of gas and get good results. I may mention that my apparatus is as perfect as they make them, also that the additional weights were quite small.

REPORTS OF SOCIETIES AND OTHER MEETINGS.

The Odontological Society of Great Britain.

THE ordinary monthly meeting of the above Society was held in the Society's Rooms, 40, Leicester Square, on February 4th, Mr. HENRY SEWILL, M.R.C.S., L.D.S., President, in the chair. There was a large attendance of members and several visitors present.

The minutes of the preceding meeting having been read and confirmed, Messrs. George D. Curnock, W. H. Kendall, F. E. Huxley, and J. J. Andrew were balloted for and duly elected members of the Society.

Mr. DAVID HEPBURN communicated specimens of a case which he thought illustrated the wisdom, in cases of difficult extraction, of sometimes leaving matters alone for a time. The patient, a lady, consulted Mr. Hepburn about the removal of a lower wisdom tooth. The tooth was firmly impacted, and Mr. Hepburn, operating under nitrous oxide gas, failed to extract it. After a careful examination he decided to leave it. A considerable amount of inflammation followed. After six months the patient returned, but examination showing it was impossible to remove the tooth as it stood, he removed the second molar and then extracted the wisdom. In answer to a question from Mr. Coffin, he said he made no attempt at replanting the second molar because the mouth was crowded. The specimen illustrated three points of interest: (1) the horizontal position assumed by the wisdom tooth; (2) the depression which existed between the fangs without any bifurcation; and (3) the cavity of absorption which was seen upon the posterior aspect of the second molar tooth, due to the pressure to which the wisdom tooth had subjected it.

Mr. JOHN ACKERY narrated a case illustrating the dangers attendant upon extraction. He believed the particular danger described was not included in Mr. Salter's long list. When first seen in 1885, the patient showed a fistulous opening near the first

lower right bicuspid. There was no sign of periostitis. An amalgam filling in the distal surface was removed, and a stinking unfilled canal was so exposed. Failing to inject any medicament through the fistula, the tooth and canal were after a time filled. A discharge still persisted. The second bicuspid and first molar were treated, but the fistula remained unhealed. In 1886 these were removed, but without good result. Subsequently the patient left Mr. Ackery for a while, returning in 1887, when she stated a piece of black stopping had made its way through the opening of the gum, and then the fistula shortly healed. The foreign body on examination turned out to be a piece of the blade of a lower stump-forceps about three-sixteenths of an inch long. Enquiry elicited that in 1878 the patient had taken gas to have the first lower right molar removed. The tooth broke on the first essay and gas was again administered, and the fragments were, the patient thought, all removed. After a time, however, a stump came to the surface, but being painless was undisturbed until removed in 1886 by Mr. Ackery. For some years prior, small abscesses used to form and burst, but not inconveniencing very much. In November, 1886, the piece of forceps worked its way out after being imbedded seven or eight years. The extractor was a man known as a careful and skilled operator, and no doubt in the rapid change of instruments required when operating under gas he had not noticed the breaking of his instrument.

Mr. C. BOYD WALLIS mentioned a case and presented models of it, in which a cleft palate had been treated by an obturator when the patient was eight years old, and the same obturator had been worn until the present time when he was twenty-five. He also showed models from a case of pyorrhœa alveolaris where the patient, a young lady, had herself pulled out three teeth and Mr. Boyd Wallis had removed a fourth. He also wished to speak of a machine for injecting celluloid. When he used celluloid largely he had contrived the apparatus, the main feature of which consisted in an injecting cylinder surrounded by asbestos, which prevented too great a heat being reached and so destroying the celluloid. Specimens of noses and ears moulded in celluloid was handed round, the colour of which, it was stated, could be darkened by passing them through the apparatus.

Mr. WALTER H. COFFIN, referring to Mr. Hepburn's case, said he had been compelled to remove a second molar to get at an impacted wisdom tooth, and had replanted the second molar with

good results. He believed Mr. Arthur Underwood had had a similar experience. He thought such cases were legitimate ones for using replantation.

Mr. HUNT (Yeovil) had also extracted second molars in cases similar to Mr. Hepburn's, and had replaced the teeth at once without any dressing or preparation, with satisfactory results.

Mr. BETTS, in a similar case, had removed the second molar with the happy result that the wisdom tooth had assumed its normal position. He had also seen a replanted second molar, but he was bound to admit that in that case the tooth had to be subsequently extracted.

Mr. STORER BENNETT, referring to Mr. Boyd Wallis' case, said he had occasionally seen a case of cleft palate which had been treated by Mr. Nasmith with an obturator bearing a hinged velum, which had been worn satisfactorily for over forty years.

Mr. WALTER H. COFFIN showed the "self-pouring coffee-pot" which he had found most advantageous as a means of obtaining a constant hot water supply during long operations—scaling, and so on. Small quantities of hot water were obtained by this means, and a nearly constant temperature could be maintained by every now and again pouring some water into the tumbler. He had been using platinum-plated instruments, and thought it might be useful if he gave the members his experience. This was generally favourable, with however some exceptions, for while iodine attacked the iron beneath the platinum plating, phosphoric acid did not injure it. He had used a spatula so plated for oxyphosphates, and it was quite unaffected. When instruments, *e.g.*, tweezers were required for dipping into iodine, their points must be made of solid platinum. Mr. Coffin also drew attention to the advantage of punching out small pieces of amadou instead of cutting with scissors. These small punched-out pieces were very handy, and could be used most conveniently for drying. He adopted the same method with satisfactory results with Chinese paper. The self-pouring coffee-pot could be obtained arranged with a spirit lamp beneath it, and so a due heat was insured, but, he (Mr. Coffin) found the simple jug answered all requirements.

Mr. HUNT remarked that one suggestion often led up to another, and Mr. Coffin had suggested to him the use of the Norwegian kettle, which was a vessel surrounded by a coating of felt which kept the contained fluid hot for six hours or more.

Mr. STORER BENNETT said that he had used nickel forceps and

found they withstood the strongest corrosives, such as iodine, perchloride of iron, &c. He found them highly serviceable for dressing purposes.

Mr. ASHLEY BARRETT showed a combination gag and mouth opener which he remarked was useful after chloroform inhalation when muscular relaxation was not fully attained. It was so constructed as to have great power, and could not slip. In reply to Mr. Coffin, he said he had tried to use it in nitrous oxide inhalation, but without success.

Dr. DUDLEY BUXTON drew attention to the danger of undertaking any operation when the patient was not fully under the influence of the chloroform.

The PRESIDENT (Mr. Sewill) then delivered his inaugural address. Having thanked the Society for the honour it had done him in placing him in the presidential chair, he said he should use every endeavour to perform his duties so as to subserve the best interests of the Society. He pointed out that although much had been done in the direction of elucidating the scientific problems of dentistry, yet much remained. In the etiology of dental caries we were still unable to trace what share was taken by inherent structural inferiority of enamel and dentine; what by evolution, since it was demonstrable that a retrogression of masticatory organs took place from the anthropoid apes to savages, and thence to civilised peoples; what to heredity—whether of family peculiarity or acquired by disease. Disease, he believed, was not necessarily the result of civilisation: indeed, most maladies transmissible from parents to children were distinctly preventible by means the outcome of civilisation; and doubtless as time went on even diseases now regarded as incurable would become less refractory. The improvement in the general racial physique which would be thus evolved would lead to more perfect dental development. The vitiation of buccal secretion was, he thought, not as yet sufficiently understood: were the chemistry of the oral secretions in disease more clearly appreciated, and their baneful effects counteracted, the teeth would be greatly benefited. Although we were familiar with the processes of dental disintegration in caries, and the methods of treatment were probably accurate, there yet remained room for improvement in instruments, materials for stopping, and methods of working them. Stopping materials were, from a chemical point of view, most imperfectly understood and were often taken simply because vaunted by manufacturers

who were unfamiliar with their physical or chemical peculiarities. Knowledge of the metallurgy of gold would probably suggest other and more reliable foils than those in use. Gold fillings were not applicable in every case; amalgams were often most useful, and the ideal filling would of course be non-metallic and of the nature of a cement, such as would be plastic and adhesive to the walls of the cavity, and, upon setting, approximate in character to dense enamel. Referring to pyorrhœa alveolaris, Mr. Sewill said it was the only opprobrium of dentistry: of its etiology and pathology we were quite ignorant, while its treatment was unsatisfactory. He regarded the affection as falling into three groups, analogous to three diseases affecting hairs and leading to baldness. (1) When little or no inflammation was present and no discharge occurring, commonly among healthy, robust persons, often of gouty diathesis, whose jaws were massive and teeth free from caries: these cases were comparable to simple premature baldness. (2) When the sufferers were debilitated and usually afflicted with some dyscrasie such as are commonly associated with alopecia. (3) The true typical cases of pyorrhœa were comparable, he thought, to sycosis. It was interesting to note that Mr. Jonathan Hutchinson had instituted a like analogy. Antisepticism, as applied to dentistry, deserved further careful study and elaboration.

Passing in review the conquests of fresh territories made in the sciences of chemistry, anatomy, physiology, bacteriology, and surgery, the President believed they all aided in advancing our knowledge of dentistry. He urged that the knowledge should be sought more for truth's sake than for mere utilitarian motives; and he trusted that the day was not far distant when the Odontological Society would take an active part in promoting and encouraging original research by endowments. It was to be regarded as a hopeful sign that dentists could boast among their ranks men who had received that highest distinction which could be conferred upon scientists—the Fellowship of the Royal Society. Much must necessarily be left to individual enterprise, as those who had the aptitude for the higher paths of research work were men whom nothing would turn from their aims; but, as was shown in the biography of Darwin, much valuable time and energy must be thrown away and lost unless means are at hand to defray the expenses of the undertakings.

In conclusion, Mr. Sewill said he was pleased to say he had received promises of valuable papers from distinguished scientific

workers, which would, he believed, fill up most, if not all, of the meetings at which it would be his duty to preside.

The SECRETARY then read the list of papers.

The meeting closed with the usual votes of thanks to contributors of communications, and the announcement that at the next meeting, March 4th, Mr. R. Hall Woodhouse would open a discussion upon "Antisepticism as applied to Dentistry," and Mr. J. Bland Sutton would read a paper upon the "Relation of Rickets to some forms of Odontomes."

Odonto-Chirurgical Society of Scotland.

THE First General Meeting of the Society, session 1889, was held in the rooms, 30, Chambers Street, on Thursday, the 10th of January, Dr. W. H. WILLIAMSON, President, in the chair.

The PRESIDENT said that the Society met for its first meeting of the session under very depressing circumstances, owing to the sad death of one of their members, two days before. Mr. Finlayson was one of the early members of the Society, and continued one of its staunchest supporters to the end. He was a most regular attender, contributed freely to the discussions, and in every way proved a very valuable member. He was sure Mrs. Finlayson and family would have the most hearty and sincere sympathy of the Society; and he would move that a resolution of sympathy with them should be passed and duly recorded in the minutes, and that an excerpt from the same should be forwarded to Mrs. Finlayson in the form of a letter of condolence.

The President showed Dr. Taggart's corundrum disc and point-maker, which enabled one to make one's own, including the thin Arthur discs. The special advantages were the exact centering, and, from the material being directly moulded on the mandril, the attachment of the disc to it was secured. A stock of old laboratory corundrum wheels could thus be used up in a satisfactory manner. The instrument was illustrated in the advertising pages of the "Cosmos," and "Items of Interest."

Mr. BIGGS said he had much pleasure in endorsing all that Dr. Williamson said about Dr. Taggart's corundrum point and disc maker. Dr. Williamson recommended dry heat to soften the corundrum, but he thought that soapy hot water would be found to be very much preferable, it being cleaner, quicker, and

less injurious to the tool. The cost of making the discs was under one farthing (mounted and finished), and they run so true as to leave nothing that could be desired in that way; and he thought every dentist ought to possess one. The time occupied in making one of the discs, including mandril, is just one minute.

Mr. WILSON exhibited the skull of a manatee (*manatus senegalensis*) showing most admirably the dental arrangement of the animal, upon which he made a few short explanatory remarks, chiefly touching upon the manner in which the teeth were erupted and took their place in the jaw.

Mr. BIGGS stated that he had carried out a series of experiments in connection with the combination of gas and chloroform, with very satisfactory results—using from twelve to twenty-four drops of chloroform on cotton wool placed on the tube of the gas inhaler, behind the valve, and then turning on the gas and administering it in the usual way. He found the jerky movements of the head were considerably diminished, and the time at the disposal of the operator greatly augmented. He had the idea from Mr. Somerville Woodiwis, of West Hartlepool, about two years ago. He desired the members to give it a trial, and on some future occasion bring it up for discussion.

The PRESIDENT said that Mr. Biggs' experience seemed to have been very satisfactory, but he thought such a method ought to be tried very cautiously, if at all, by a single-handed operator, as such very small doses of chloroform appear to have caused death in many cases. However, a more lengthened experience of it might prove its value in prolonging the period of anæsthesia from nitrous oxide, and be found better than the combination with ether.

The following paper "On White Fillings," by Mr. Whitehouse, was then read by the Secretary :—

It is within my experience to have numerous cases of this class of work under observation, tooth and filling in as good a state of preservation as when inserted four or five years ago; and, somewhat surprising, most successful of all are large crown cavities in upper and lower molars in the mouth of delicate young people, where the abundance and acidity of the saliva has led one to speak of the treatment as only temporary. My experience of this class of case has arisen in this way; instead of half filling the cavity with cement, previous to the use of gold or amalgam, which should be done for several important reasons, besides economy of gold

and time in its adjustment and the expensive amalgams it is now the fashion to use, I have completely filled the cavity, and directed the patient to return in six months or so, to have gold or amalgam adjusted to the surface to take the wear of mastication. The fillings have quickly worn to a certain degree of cup-shape, but after that point wear has practically ceased. This wear is obviated by the use of the porcelain stoppers (*Ash's Catalogue*, p. 15), easily adjusted if due attention is paid to the little details presently to be described. There is no doubt but that cement fillings, whilst perfect as fillings, are as preservative of the tooth substance, to say nothing of the nerve, as good as the best of the metallic class—Sullivan,—except at cervical margins under, or very near the gum. In such cases the treatment would be to adjust a pellet of gutta-percha, leaving it very full on the margin, completing the filling with cement, trimming when hard to the required shape, and then with warm spatula press in and smooth off the superfluous gutta-percha. To use any of the white fillings very near or under the gum is not to do justice to the patient or cements.

It is much to be regretted that operators who are capable gold fillers, when they use cement or amalgam, will not *condescend* to be as interested and careful in gaining the best possible results with the latter as the former; when commencing an adhesive filling the rubber dam is adjusted as a matter of course; is that so when using cement? And yet to get the best results in most cases it is as necessary for the one as the other.

The following simple experiment will prove that there is an absolute waterproof solution at hand to protect white fillings from the action of saliva in those positions where there is no wear, viz., in the interstices of the teeth—just that point where they are most liable to fail. On a flat surface of the composition, sold with the Model Duplicating Apparatus, place one drop of water; in a few seconds wipe it off again. It will be found, unfortunately, that the composition has absorbed a portion of the water, and has swollen, and thus a bump has been raised on the flat surface (I say unfortunately, because it was several years before the use of this waterproof solution suggested itself, and thus remedied a serious defect of the apparatus in the hands of those who did not realise the importance of becoming practised in the use of very quick-setting plaster). Now float a little of the waterproof solution on a fresh place, and in two minutes it will be found the composition cannot absorb water, for let a drop remain

ten minutes or more after wiping off, it will be found the surface is as flat as before, thus proving no water has been absorbed. Again, if any of the quick-drying varnishes be tried, it will be found they are not waterproof, for the composition will swell, not of course so quickly as when nothing is used; and, if a little of the waterproof solution be run across a glass surface, in two minutes there will be found a film of gutta-percha, identically that used as the base of all gutta-percha fillings, adhering to the glass with considerable tenacity, and when removed, possessing a large amount of toughness and unbroken surface. This solution is most conveniently applied to a filling by floating it between the teeth from a small piece of amadou or wool held in the tweezers.

Four instruments are sufficient to adjust these fillings, No. 2, *Ask's Catalogue*, p. 204, to mix with (this instrument is rendered more useful by filing the top end, represented in the engraving as round). No. 2, p. 20, is useful, kept unsoiled, to pass between teeth to bank up the cement and remove the mass of overplus before setting. Nos. 31 and 33, p. 211, have proved themselves useful for the same purpose, more especially warmed to press in and pare off the superfluous gutta-percha at the margin. Fixed in some position always at hand should be a pad, oiled, or, better still, rubbed over with tallow, on which the instruments can be wiped to prevent the cement sticking to them. This may seem a very small matter to refer to, but unless these details are attended to, and every instrument one may possibly require immediately at hand, the cement commences to set before a proper adaptation to the edges of the cavity is made, and much has to be removed with chisels that had better be pressed off the edges of the cavity whilst soft. Of chisels, unless one is in possession of Nos. 2 and 4, *Catalogue* p. 243, or very similar shaped instruments, the facility with which the trimming of fillings can be accomplished has yet to be appreciated.

In using the Cavity Stoppers, *Catalogue*, p. 15, when a suitable one has been selected and received any required grinding, it should be warmed and the centre touched with "sticky wax" (equal parts resin and wax), it can then be carried from the bracket by the suitable burnisher that will best press it into position, and adjust the cement around; attempt to carry this smooth and round porcelain with the tweezers, and it will likely spring from them.

White cements will be generally employed in the immediate

future, in conjunction with gold, for filling large anterior or posterior cavities in molars, involving more or less of the crown. The chisel is used freely on fragile corners and enamel, the undercuts are not required so pronounced as for metal filling; the stickiness of the cement can be somewhat relied on, hence much pain is saved in preparation of cavity, and interference with the nerve avoided. No. 4 gold is cut to shape with a strong pair of nail scissors, as though intended to serve as a matrix, leaving enough to overlap the lingual and labial edges of cavity the thirty-second of an inch, care being taken to get more or less convexity of outline in that portion to be in juxtaposition to the cervical margin of cavity. The gold is placed in position, and with a sharp point the festoon line representing the inner and outer cusp, and the depression in centre line of tooth, is marked, and the gold cut; another piece of gold is bent to fit the depression, and soldered at this point with No. 2 solder, to form the required masticating surface. By cutting, filing, and bending, and trying in the mouth, the ends of this gold can be brought into suitable contact with the first piece; the soldering is completed with No. 3 and a tag inside to catch in the cement, which is mixed thin, a portion worked on the tag, the remainder into the cavity rendered absolutely dry; the cervical margin of gold is pressed home first with considerable force, using a strong excavator or right-angle chisel, which, catching in the gold, permits of controlling the direction.

A filling as described can be completed well in an hour, and at one sitting, although a previous wedging and application of carbolic resin has several advantages, and is sometimes imperative. A busy practitioner can save his time by taking an impression in composition the first visit, after knocking down the fragile edges, the cap can then be prepared in the workroom; the impression usually will not show the cervical edge, the adjacent tooth of model must be cut off to admit the gold being left fully deep to adjust in the mouth. It is quite legitimate to grind a little off an antagonising cusp if, when finished, the bite is raised. In teeth where one may predict a speedy failure of the edges, especially at those most vulnerable points of all, the corners of the cervical margins at the edge of the gums, I shall confidently believe, until time proves to the contrary, that the teeth I have treated as described will be as durable as those filled in the usual way, if not more so, and without doubt more artistically than amalgam.

Also, if decay will not *commence* at a spot *completely* under the gum, and the assumption is not far fetched that it will very rarely do so, there is much to be said for these fillings from this point of view.

The PRESIDENT announced that the next meeting would be held on Thursday, the 14th of February, when the discussion on the paper they had just heard read would be taken.

Edinburgh Dental Students' Society.

THE third meeting of this Society was held in the Dental Hospital on Monday evening, January 7th, Mr. D. MONROE, L.D.S., President, in the chair.

Messrs. Gray, Anderson and Wilson, were formally admitted as members of the Society.

The PRESIDENT then called on Mr. A. E. Donagan, B.A., the Secretary, to read his paper on "Various Methods of Root Treatment," in which the reader strongly advocated immediate root filling. This was followed by a long and very interesting discussion, in which nearly all the members present took part.

After the President had intimated the subject for the next meeting, the members separated.

The fourth meeting took place on Monday, February 4th, the President, Mr. D. MONROE, in the chair.

In opening the meeting, the PRESIDENT alluded to the great loss the Society had sustained by the death of one of their Hon. Presidents, Mr. Matthew Finlayson, L.D.S., who had always taken a warm interest in the doings of the Society, and the Edinburgh dental students in general. He then gave a hearty welcome to Mr. J. Leslie Fraser, L.D.S., who had travelled from Inverness especially to address the meeting.

The minutes having been read by the Secretary, and approved of, Mr. JOHN TURNER, L.D.S., showed a pair of hawksbill forceps made by Messrs. Ash to his own design, the peculiarity being a cowhorn beak on the buccal side; these were greatly admired.

Mr. H. B. EZARD, L.D.S., brought forward a vulcanite denture made with the new granular rubber.

Mr. A. E. DONAGAN exhibited an abnormally large upper molar tooth, and a central incisor with the root at right angles to the crown.

After remarks had been made concerning the specimens shown, the President asked Mr. Leslie Fraser to read his paper, entitled "Practical Hints." This partook more of the nature of a lecture, and embraced almost every branch of operative and mechanical dentistry. The reader's remarks were rendered the more instructive as he passed round a great number of models, instruments and various appliances as used by himself. He also showed several varieties of tooth crowns, the Logan being the first favourite; also a very neat piece of bridge work in vulcanite, carrying the four upper incisor teeth. At the close of the paper, instead of the usual discussion, a general conversation was entered into concerning the paper.

After a most hearty vote of thanks had been given to Mr. Fraser, the meeting dispersed.

After a short interval the majority of those present at the Society's meeting re-assembled in the Albert Hotel and entertained Mr. Fraser at supper. Mr. D. Monroe occupied the chair, while Mr. John Turner acted as *croupier*.

The CHAIRMAN, in proposing the health of the guest, alluded to the great opportunities of acquiring operative skill that Mr. Fraser had enjoyed both on this and on the other side of the Atlantic, and said that he could not express all that he felt as to their appreciation of Mr. Fraser's efforts on their behalf.

The toast was responded to with full musical honours and three times three.

In replying, Mr. FRASER, after acknowledging the toast, proceeded to give the company a most interesting account of his experiences in the United States, both before and during the International Medical Congress, and compared the systems of dental education as carried out on the two sides of the Atlantic.

A most enjoyable evening was spent, and musical talent being in great force, it was well into the early morning before the chairman had been toasted, and "Auld lang Syne" had been sung.

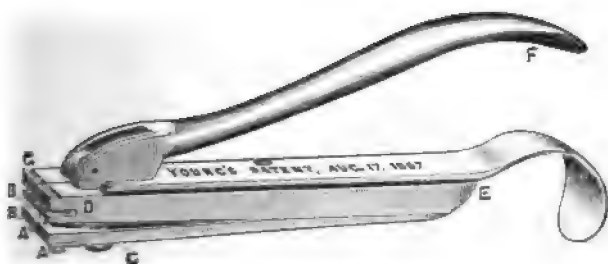
A few hours later, in the Dental Hospital, Mr. Leslie Fraser gave some demonstrations, including a gold filling with the Donwill engine mallet and the insertion of a Logan crown. The latter gave the greatest satisfaction, from the rapidity with which it was fixed and the beauty of the case when finished.

NEW INVENTIONS.

Young's "Adjustable" Perforators.

REAL improvements in our workroom tools are so rare that we welcome with pleasure a new twin punch that promises to greatly facilitate the important and ever-recurring operation of perforating the metal "backing" of ordinary double pin teeth.

Mr. Young has the happy notion of adjusting and locking the relative position of double perforators by the very pins of the tooth for which the holes are to be punched—a principle which, if adequately realised, should ensure absolute accuracy with the least possible trouble.



The specimen of his appliance examined by us has a range of from two to seven mm., is neatly made, but has some grave faults of design that could be easily rectified. For instance, the leverage is not great enough for readily punching two holes at once, especially as the advantage is unfortunately arranged to diminish on closing.

The T piece—whose cross bar tends to bend or spring in punching "wide," breaking a frail tooth by spreading the instrument—might well be replaced by a strong square outside link. The main idea is sound, and should be embodied in a most effective tool.

MINOR NOTICES AND CRITICAL ABSTRACTS.

Dental Education.

A RECENT article in the *Journal of the British Dental Association* discusses two schemes for improving the professional education of dentists, but the list might easily be extended by the addition of one if not two others. It may be said that one scheme proposes to amplify the present examination by including dental mechanics, and developing the practical part of it; but does not in any way change the curriculum, and is distinctly against division. A second also seeks to improve the examination, but proposes to divide it; requiring all students to pass the first and second professional examination for the M.R.C.S. and L.R.C.P. This would materially develop the curriculum, and would for the first part of their career place the dental and medical student on the same footing. The final examination, however, for the dentist would consist as at present, of dentistry and surgery only, but amplification to be made in the subjects of operative and mechanical dentistry.

To render this increased curriculum possible it is proposed to reduce the three years' apprenticeship to a dentist (for the purpose of mastering the mechanical department) to two and a-half years, and to increase the hospital career to two and a-half years instead of two.

A third scheme proposes some enlargement of the curriculum, and the establishment of a new diploma or degree; M.D.S. (Master in Dental Surgery) to be taken by those who desire a higher diploma than the L.D.S. (Licentiate in Dental Surgery) after a more thorough and searching examination. The fourth, which however seems to have but few advocates, proposes to create a degree in dentistry, D.D.S. (Doctor in Dental Surgery).

In considering these proposals, it would be well that the dentists should definitely make up their minds as to the exact position they wish to take in relation to the medical profession. If, as most of us believe, it is desirable for them, and indeed for the medical profession as a whole, that they should be an integral part of it, then the second scheme is the one that will commend itself. From this point of view it is encouraging to see the dentists, who but ten years ago were unrecognised as a profession, without an Act or a Register, anxious to blend more closely with the rest of the profession.

It would be a decided advantage to both medical and dental students if, during their period of study at the general hospitals, there should absolutely be no difference in their curricula until after the examination has been passed in anatomy and physiology. From that point the medical student would devote himself to the subjects for his final examination, the dental to those required for the L.D.S.

The fault of the first scheme is, that until an adequate examination is required of the dental student in anatomy and physiology these subjects will be neglected, notwithstanding the fact that they are the groundwork upon which the subsequent superstructure has to be built up. Moreover, it does not bring the dental into any closer communion with the mass of the medical profession.

To the third scheme it may be objected that it separates the dentists into a distinct profession, and that it creates a new diploma, whereas one source of strength to the dental profession has been its one diploma, with which the public and the profession are becoming familiar; the establishment of a new one would produce confusion. The multitude of the medical qualifications is only a cause of weakness, and should not be followed by the dentists.

Finally, a development of the practical and mechanical examination for the L.D.S. would provide all that is required, if in addition it could be arranged that an "Honours List" could be published after each dental examination, or an honours examination held in addition to the ordinary one. All that can be gained, from a professional point of view, from this third scheme can be supplied by the second. If other or higher qualifications are required there are enough to be obtained by those who choose to work for them.—*British Medical Journal*, January 19th.

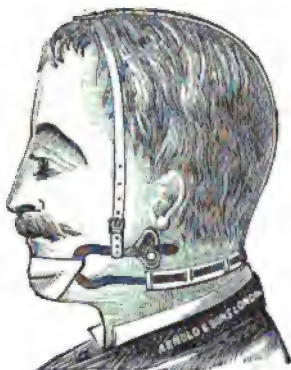
New Apparatus for Fracture of the Lower Maxilla.

By JOHN WARD COUSINS, M.D.LOND., F.R.C.S.,

SENIOR SURGEON TO THE ROYAL PORTSMOUTH HOSPITAL AND TO THE PORTSMOUTH AND SOUTH HANTS EYE AND EAR INFIRMARY.

IN many cases of fracture of the lower jaw the great mobility and displacement of the fragments render them difficult to manage. In double fracture the separate pieces of bone are much dragged out of place by the muscles attached to them, and it is

often not easy to maintain the broken parts in apposition. In difficult cases of this kind I have employed my apparatus with very great success. It is especially adapted for fracture of the condyle or ramus, and for double fracture of the lower jaw. In



Splint applied for fracture of body of lower jaw.

ordinary cases it may be used for the sake of lightness and comfort.

The apparatus consists of a steel splint which encircles the neck. It is horseshoe-shaped, and the ends on either side



Splint applied for fracture of condyle or ramus.

terminate in a loop which supports a movable pad. The pressure of the pad is regulated by a screw. A piece of webbing, extending from loop to loop, is fixed under the chin with a buckle, and

another piece passes from side to side over the forehead, and is supported in position by a central strap attached behind to the splint. The apparatus can be regulated to fit the patient. The splint is made in several sizes by Messrs. Arnold and Sons, West Smithfield. It can be readily fixed with ordinary padding and bandages. When in position it acts as a lever with the fulcrum at the occiput. The pad presses forwards the ramus, and the bandage elevates and secures the jaw. The position of the bandage under the chin must be regulated according to the seat of the fracture.

CASE 1. *Fracture of both condyles of lower jaw.*—A gentleman, aged twenty, was thrown off a bicycle in June, 1886, in descending a steep hill near Portsmouth. He was brought to the Royal Portsmouth Hospital with a severe contusion of the chin and fracture of both condyles of the lower maxilla. The pain and swelling were severe, and the backward displacement very great. The ordinary splints and bandages were applied, but they were of very little service, and they failed to steady the bones. The application of my splint gave him complete relief; the line of the teeth was restored and the bones fixed. He left the hospital in five weeks without any deformity.

CASE 2. *Multiple fracture of lower jaw, with severe head injury.*—During April, 1888, I was summoned to Hambledon to see, in consultation with Dr. Jeram, a groom who had been severely injured in the head and neck by the kick of a horse. For some days he remained in a very critical condition, labouring under symptoms of cerebral compression. The jaw was broken at the angle on the right side, and an oblique fracture had also occurred near the symphysis. The neck and side of the head were distended with subcutaneous extravasation. In eight days he regained consciousness, but continued very excitable and troublesome, with well-marked paralysis of right arm and leg. My splint was now carefully applied, and it completely controlled the fractured parts and gave much comfort to the patient. At first it was put on very lightly and well padded. In six weeks union was complete and the result very satisfactory.

These cases are examples of troublesome forms of fracture, in which the fragments are difficult to maintain in apposition. In one case the injury was caused by a severe fall on the chin. The condyles were unevenly broken, and the displacement on the left side required very careful adjustment. The splint proved a

very effectual contrivance, and at once gave great relief. In the other case a double fracture of the lower maxilla complicated a dangerous injury of the head. The extravasation of blood and contusion of the soft parts were very severe. The fracture at the angle was irregular, and the fracture near the symphysis oblique. The central fragment was depressed and loose.—*British Medical Journal*.

Chronic Cocaine Poisoning.

M. MAGNAN, at the Société de Biologie, lately (*Progrès Méd.*, No. 5) described three cases of chronic poisoning by cocaine characterised by marked mental and sensory disturbance. The first case was one where cocaine had been substituted for morphia in the relief of renal colic. After two months' use of the drug the patient began to suffer from illusions of sight and hearing and neuro-muscular irritability. He discontinued the cocaine for six months, resorting to morphia; but on again resuming cocaine the delusions recurred, the patient feeling imaginary blows on the body, or something under the skin, together with a certain degree of analgesia. At the end of a short time he had an epileptic seizure. In the second case (one of hepatic colic) the same substitution of cocaine for morphia had been effected, and produced very similar effects, also terminating in an attack of epilepsy. The third case also presented hallucinations of sight and hearing, sensation of foreign bodies beneath the skin, and slight analgesia. M. Magnan pointed out that in its action on sensation and the sensory organs, cocaine seemed to resemble the alcohols and absinthe rather than morphia, with this difference, that whereas the influence of cocaine poisoning seemed to operate on the cerebral cortex from the occipital lobes forwards, alcohol and absinthe appeared to affect the cortex in the reverse order.—*The Lancet*.

OWENS COLLEGE, MANCHESTER.—We are requested to call attention to a vacancy at the above institution for the post of Lecturer on Dental Anatomy and Physiology. Particulars may be learned from the official advertisement in the present issue of the Journal of the Association.

ANNOTATIONS.

WE are pleased to hear satisfactory news from a correspondent of the progress of dental matters at the antipodes. New Zealand has possessed a Dental Act for some six or seven years, Tasmania since 1884, and, still more recently, Victoria has followed suit. All these Acts are based, as far as their main principles are concerned, on the English Act of 1878: that is, they have created a register and enacted that after a fixed date none but duly qualified persons shall be allowed to enter their names upon that register. Something of the same sort is in force in Cape Colony and Canada. In Tasmania a dental board of examiners is appointed by the medical council, consisting of half dental and half medical practitioners, for the purpose of conducting examinations and granting certificates under the Act. Candidates for examination must have been for three years at least learning mechanical dentistry as the pupils of legally qualified dentists, and have been engaged for at least two years in the study and practice of dental surgery at the dental department of one of the general hospitals. It is to be hoped that the sister colonies, New South Wales and Queensland, will shortly follow the example, for charlatans and quackery are as plentiful there as in London. Our correspondent concludes with a kindly tribute to the work of those who conduct the Journal, which is exceedingly encouraging to the Committee and sub-editor.

THE Medical Committee of the Dental Hospital of London, ever anxious to keep pace with the requirements of the profession, have organised a series of demonstrations by the members of the staff, each member in rotation demonstrating. The subjects selected have been most practical and useful, and much appreciated by the students. The staff is in this way enabled to give practical teaching, and each is able to teach any special method of filling or treatment to which he has devoted particular attention. With the New Year some rather important changes came into action. Three qualified House Surgeons have been appointed and have already entered upon their duties. By this arrangement each room has always a qualified man in charge of it. A new room has been fitted up and opened for the special treatment of the irregularity of children's teeth, and each case is to remain

under the care of the surgeon who first sees it. Mr. H. Lloyd Williams, M.R.C.S., L.D.S.Eng., has been appointed Curator of the Mechanical Work Room, and he, together with the Lecturer on Mechanical Dentistry, have re-organised the work room, and all work done therein is now done under superintendence.

DENTAL HOSPITAL OF LONDON ATHLETIC CLUB.—The last Smoking Concert of the Session was held at the Hummum's Hotel, Covent Garden, on Wednesday, January 30th, the Dean, Mr. Morton Smale, occupying the chair. An excellent programme was got through and a very pleasant evening passed. The Musical Society performed selections from "Pinafore," greatly contributing to the evening's pleasure. The programme concluded by the singing of "Auld Lang Syne," and hearty cheers for the popular chairman.

THE Annual Dinner of the Club will take place on Saturday, March 2nd, at the Holborn Restaurant, when the President of the Club, Sir Edwin Saunders, will take the chair. Amongst the names of those expected to be present are Sir William MacCormac, Drs. Bristowe, Ord, Julius Pollock, Mitchell Bruce, Willcocks, Mott, Buxton, Hewitt, Messrs. Christopher Heath, Victor Horsley, Rickman Godlee, Pearce Gould, Bland Sutton, Shield, Morgan, Boyd, Hepburn, Matheson, Woodhouse, Hern, Gregson, Morton Smale, Lloyd Williams, Hutchinson, Storer Bennett, Claude Rogers, Read, Canton, Truman, Bailey, Underwood, Braine, J. Smith Turner. Tickets, 5s. 6d., can be obtained of the Hon-Secretaries.

OUR contemporary, *The Lancet*, quotes and comments upon some interesting observations by Dr. Dubuiski of Kronstadt, who during the last ten years has recorded thirty cases of a peculiar ophthalmic affection occurring in young sailors, traceable to working in the vicinity of strong electric lights.

The symptoms of this affection, which he proposes to denominate "photo-electrical ophthalmia," may occur during sleep. The patient is awakened by profuse lacrymation associated with intense peri-orbital pain. Photophobia is extreme. Nothing, however, can be seen upon examination except palpebral œdema and peri-corneal injection of a very marked character. With the ophthalmoscope hyperæmia of the papilla is found, and sometimes a venous pulse in

the retinal vessels. After a time, varying from an hour and a half to three hours, these symptoms subside and the patient is able to go to sleep, and the next morning he awakes quite well, with the exception of a certain amount of ocular fatigue such as is caused by reading late at night. Sleep appears to be an indispensable condition for the manifestation of photo-electrical ophthalmia. Thus, in the case of men who have been exposed during the morning to the electric light, when they take a midday nap the disagreeable phenomena wake them up at that time, and not during the succeeding night. Although the patient, when awake, suffers slightly from phosphenes, he is quite able to read and write during the evening. The pathological cause of symptoms above described would appear to be a hyperemia of the optic nerve and some lesion of the nervous filaments of the cornea.

THE new list of members accompanies the present number. The Executive have been at some trouble to make it as complete and correct as possible, and it is hoped it may be a valuable "directory" for the guidance of members of the Association. In addition to the ordinary list of members and the towns' list, a complete list of the branches with their officers has been added. It will be seen at a glance how well the provinces are represented on the Representative Board, and may be of value in guiding the branches in their selection of representatives.

THE new volume of the *Transactions*, which we also present to our readers with this number, will, we trust, prove interesting and instructive.

OUR printers, Messrs. Bale and Sons, of Great Titchfield Street, have prepared with great care a case or cover for binding the Association Journal, which will, we imagine, prove a great convenience to members who wish to bind up their Journals. It is got up in dark green cloth, with green leather bands at the back, with the name of the Journal, the date and the volume in gold letters upon the bands. The case is made sufficiently large to take the twelve numbers of the Journal and the *Transactions*.

WE shall exhibit specimens of these covers at our annual meeting for the inspection of members, and we have little doubt that they will be fully appreciated. The cases can be obtained of Messrs. Bale & Sons for one shilling and sixpence each, or they will bind the parts for two shillings and sixpence each; carriage paid three shillings.

THE pamphlet on "Quackery" has already gone through two editions, and a third is nearly disposed of. This fact speaks for itself and sufficiently shows that there are a large number of gentlemen who find in its pages the expression of their own convictions.

STATEMENT of operations performed at the Dental Hospital of London, Leicester Square, during December, 1888, and January, 1889:—

			Dec. 1888.	Jan. 1889.
Number of Patients attended	...	...
Extractions :				
Children under 14	...	...	294	483
Adults	...	...	803	854
Under Nitrous Oxide	...	...	626	922
Gold Stoppings	...	...	277	345
Other Stoppings	...	...	904	1178
Advice	...	...	127	201
Irregularities of the Teeth	...	...	132	114
Miscellaneous and Dressings	...	...	152	428
Total	...	...	3315	4525

GEO. SEYMOUR, L.D.S., *House Surgeon.*

STATEMENT of operations performed at the National Dental Hospital during December, 1888, and January, 1889.

			Dec. 1888.	Jan. 1889.
Number of patients attended	...	..	1584	1972
Extractions :				
Children under 14	...	...	230	279
Adults	...	...	394	483
Under Nitrous Oxide	...	...	748	599
Gold Stoppings	...	...	59	67
Other Stoppings	...	...	480	433
Advice and Scaling	...	...	426	404
Irregularities of the Teeth	...	...	96	83
Miscellaneous	...	...	146	235
Total	...	...	2549	2593

E. C. FISK, L.D.S.Eng., *House Surgeon.*

WORK done at the Victoria Dental Hospital of Manchester during December, 1888, and January, 1889.

		Dec. 1888.	Jan. 1889.
Number of patients attended	...	832	991
Extractions :			
Children under 14	}	652	802
Adults			
Under Nitrous Oxide	...	88	109
Gold Stoppings	...	30	32
Other Stoppings	...	100	96
Miscellaneous	...	231	245
Total ...		1101	1284

PERCY A. LINNELL, L.D.S.Eng., *House Surgeon.*

EIGHTEEN months' work at Addenbrooke's Hospital. Report of Dental Department:—

Number of patients attended	...	1404
Extractions	...	1668
Under Ether, Chloroform, or Nitrous Oxide Gas	...	78
Stoppings	...	183
Advice, &c.	...	82

Total for eighteen months ... 2011

W. A. RHODES.

THE tenth annual meeting of the directors and contributors to the Edinburgh Dental Hospital took place on the 31st ult., Dr. Peddie, V.P.R.C.P., in the chair. The Committee's Report was a highly satisfactory one, the number of patients treated during the year being 8,142—an increase of 622 on the previous year. Of that number 2,115 had teeth stopped, 287 had anæsthetics, 5,689 underwent ordinary operations, and 51 received mechanical or other special treatment. The Treasurer reported the funds to be in a healthy condition, there being a sum of £530 1s. 5d. on deposit receipt and current account to the credit of the Institution. The new premises were reported as being well advanced towards completion, and it was hoped they would be ready for occupancy towards the end of March or beginning of April. A full report of the work of the Edinburgh Dental Hospital for the year 1888 will be forwarded to anyone on applying to the Dean.

ROYAL COLLEGE OF SURGEONS, EDINBURGH.*—During the January sittings of the examiners the following gentlemen were admitted licentiates in surgery :—Henry Knowles, Yeadon, Leeds; Kenneth MacKinnon Douglas, Edinburgh; Sydney Harry Appleby Stephenson, Nottingham; and Theophilus Bulkeley Hyslop, Inverness. The following gentlemen passed the first professional examination for the licence in dental surgery: Albert Maurice, London; Arthur Percy Stocken, Ealing; Charles Henry James Acret, Canada; Walter Graham Routledge, Exeter; and the following gentlemen passed the final examination, and were admitted L.D.S. Edinburgh: Thomas Cuthill M'Kenzie, Edinburgh; John Edwin Husbands, Bristol; John Stewart, Edinburgh; Frederic Jones, Lancashire; and John Henry Larbalestier, Southampton.

FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At the January Sittings of the Examiners the following candidates passed the first part of the Dental Examination: Edward C. Carter, London; Thomas C. Colledge, Stroud. Two candidates were referred. The following passed the final examination, and were admitted Licentiates in Dental Surgery: Edward George Carter, 181, Edgware Road, London, W.; John Gordon Mackintosh, 76, Lowther Street, Whitehaven; Charles Ernest Tucker, 4, St. John's Wood Terrace, London.

THE Edinburgh Dental Students' Society held the third meeting of the session on Monday, 4th February, the President in the chair. Mr. Leslie Fraser, L.D.S. Edin., of Inverness, read a most interesting paper on "Hints in Dentistry."

WE are requested to remind members who may wish to possess a copy of the elaborate catalogue of the Museum of the Annual Meeting of 1888 held in Dublin, that a number of copies still remain on hand and may be obtained by addressing an application (enclosing a penny stamp for postage) to Messrs. Bale, 87, Great Titchfield Street. It is requested that members desiring copies will kindly apply as soon as possible.

* One gentleman's name has, at his special request, been omitted from this list.

THE Second Ordinary Meeting of the Odonto-Chirurgical Society (Session 1889) was held in the Rooms, 30, Chambers Street, Edinburgh, on Thursday, 14th February, at 8 P.M., W. H. Williamson, M.D., L.D.S., president, in the chair, in the course of which a discussion took place on Mr. Walter Whitehouse's paper on "White Fillings," read at the previous meeting.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The library will be closed on Wednesday, Thursday, and Friday, February 13th, 14th, and 15th, in consequence of the Hunterian Festival. On these days the lower reading-room will be open. Readers requiring books for use during the time the library is shut are requested to communicate with the librarian on or before February 12th.

ANOTHER death of an infant from an overdose of morphia administered in a "teething powder" has been recently reported. It would be well to discover whether the drug is equally distributed in the powders commonly sold.

IN our published list of the successful candidates for the first examination for the L.D.S. of Edinburgh, we have omitted the name of one gentleman at his own request, he having strong personal objections to his name appearing in print.

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our Correspondents.

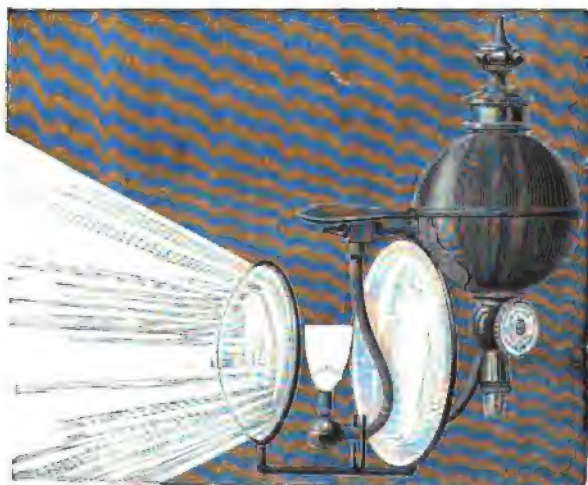
Fog and Artificial Light for Dental Work.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—In reply to "An Old Practitioner" I would venture to suggest to him, and all other practitioners who are similarly inconvenienced, the use of the "Albo-Carbon Light."

I practise in a provincial city not 150 miles from London, where at occasional times we suffer from dense fogs and consequent absence of clear sunlight, although nothing when compared with the London "annual plague." Fearing, when I commenced practice here (some years ago), that occasions might require me to use artificial light in my operating room *during the day time*, I got fixed in a convenient position in front of my chair an ordinary gas bracket fitted with the

Albo-Carbon apparatus. Doubtless, many of the London practitioners are thoroughly acquainted with this light, and have proved it of great service, and a *perfect* substitute for the natural light. I send an illustration of the apparatus as I have it in my operating room, with a reflector behind to intensify the light, and a bulls-eye lens in front to concentrate and focus the rays of light on the chair. The Albo-Carbon Light has all the advantages necessary for the operating room. The penetrating and diffusive powers of this light are most remarkable ; at the same time the character of the light is mellow and soft.



A room or hall lighted by this system is literally flooded with a pure, cool, and *steady* illumination throughout. Another agreeable feature is the absence of any "dazzling" effect, although the light is of so brilliant a character. By the aid of the Albo-Carbon appliance, 1,000 cubic feet of gas will give more light, and of a finer and steadier quality than 3,000 feet of the same gas in its ordinary state, and after allowing for the cost of the material employed in commixture with the gas a saving of some 30 to 50 per cent. is effected for the consumer, thus proving itself to be the *cheapest* form of obtaining a *good* light.

I enclose cuttings from a list of testimonials, and opinions of the press. They speak for themselves. If "an old practitioner" wants a really good substitute for the natural light, and one that will enable fine and delicate work to be done, I should advise him to communicate with the Albo-Carbon Light Company, 74, James Street, Westminster, where he may secure any further information he may desire.

I am, dear sir, yours faithfully,

February 1st, 1889.

L.D.S.E.

Fog.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—My advice to "An Old Practitioner" who wishes to continue working by artificial light, would be—don't ; but if "An Old Practitioner" is like some of us younger men, compelled to operate on foggy days, I would advise him first to have his room lit well by ordinary means ; second, to have a gas reflector—such as the dépôts supply—to throw a light over the patient's face and into the mouth ; and thirdly, to provide himself with the electrical apparatus supplied by the Dental Manufacturing Company. This apparatus is worked by batteries and accumulators contained in a small box easily stowed away in a cupboard. The light is obtained from a tiny incandescent lamp fixed on a mouth mirror such as we usually hold in the mouth when operating. I have had this apparatus in use for four years, and find it answers admirably.

Yours truly,

London, January 21st, 1889.

A YOUNG PRACTITIONER.

Dental Quackery and American Dentistry.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—Your correspondent, "An American Dentist," has expressed himself in terms of irony which render his meaning somewhat ambiguous, and I trust I shall not in consequence do him any injustice in the reply which I think his letter demands, and for which I trust you may kindly afford space. We all can sympathise with our American cousins under the burden of quackery—exemplified by your correspondent—from which they suffer. Although, of course, there are plenty of first-rate practitioners in every department, there are probably more blatant medical charlatans in the States than in any other country, and judging from the advertising columns of newspapers there is a greater call for quack medicines than in all the other nations of the world put together ; and nowhere—to judge from the same literature—are appeals to credulity and gullibility so certain of acceptance, even when, so to say, fraud is written in large characters on their very fronts. We are certainly better off in this country, and are likely to remain so whilst American State legislation continues as now at a deadlock. We are sorry for these troubles among our kinsmen but are powerless to help them. Our duty lies at our hands. We wish to protect the public, to elevate our profession, and to give the best chance of worldly success to all honest qualified men who adopt our calling. Those who take to dentistry as a profession are very rarely men of wealth, or even of great pecuniary resources, and to most of them the necessity of earning a livelihood is in greater or less degree pressing.

" For the deserving, accomplished, modest young practitioner, after years spent in qualifying, to see himself neglected by the public whilst the impudent, fraudulent knave amasses wealth is not to be borne ; and need not be borne. We are not yet at the end of medical and dental legislation in this country, and many still existing anomalies and abuses will be in time dealt with. For instance, now (although it is by no means impossible) it is much more difficult to convict an unqualified practitioner for assuming the title "doctor" than for taking the title "dentist." This will be altered before long ; and in the meantime the Medical Acts and our Dentists Act and our Association give us the power which we intend to use to drive the quacks to lower and lower subterfuges in order to escape the meshes of the law. One weapon we possess in dissemination of literature like my letter on "Dental Quackery." I am happy to know it has already been distributed in thousands, and will be in thousands more. It cannot possibly do anything but good to American practitioners of the class of your correspondent. I have conversed with many of the public who have read it, and I have invariably found that they have understood the very plain distinction which the pamphlet draws between the quack and the professional man.

" An American Dentist " when he writes of " statutory degradation," seems to imply that a grievance exists in the fact that only two or three American dental qualifications are registrable in this country. The sole reason of this is that with the few exceptions now recognised by the Medical Council, no American examining body requires of candidates proof of education and competency up to the British standard. Will "An American Dentist" tell us how many Dental Colleges in the States compel students before entry to pass an examination in general education equal to our preliminary ; will he tell us how many enforce a three years' pupilage in mechanical dentistry ; will he state how many insist upon two years' education at dental and medical schools ; and will he tell us which of these bodies command means on a par with those existing here for enforcement of their regulations ; and lastly, will he tell us how many American Colleges put the educated candidate through a test equal to the British examinations before granting a degree ? If he enquires, he will find that the truth is—as the British authorities were made aware—that the majority of American licensing bodies offer no valid guarantee whatever of the real education and actual qualification of their graduates ; whilst some are willing to part with their diplomas for very little further consideration than the payment of a few dollars. It must be evident that in framing our regulations it was necessary to draw the line where it was drawn ; otherwise the Dentists Act would have been futile, and every rogue and adventurer who wished his name to be placed on the Register would have needed only to purchase one of the bogus diplomas of which I speak. Let American corporations raise

the qualifications of their graduates to the British level, and they will be recognised at once by our authorities.

Your obedient servant,
THE AUTHOR OF "DENTAL QUACKERY."

Bye-Paths of Quackery.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—I desire to bring under your notice the following incident, which happened within the last fortnight, when I was visiting a home-patient in this town. A respectably-dressed man knocked at the partly open door, and entered. In a loud tone he asked, "Is there anyone here as could do wi' a good new set of teeth? If so, Mr. ——— [mentioning the name of a dentist whom I have never seen, nor had I ever heard of him prior to this], of ———, will make 'em for 'em cheap, and good uns too." Finding no one desired his services, he then left. Is it not a case of consummate impudence (one can hardly call it by the polite term *lack of professional bearing in the interests of self-advancement*) for a dentist to carry on his profession (? trade) in this manner after the style of an itinerant pedlar? I am sure, sir, you will agree with me that such an occurrence is a grave dishonour to a worthy profession, and I trust it will evoke from you, as editor of one of its most important organs, strong tones of disapproval. Hoping that the ventilation of this incident may bring about a change for the better,

I am, Sir,

Yours very sincerely,
J. PIXTON WALKER, M.R.C.S., L.R.C.P.,
Resident Medical Officer.

*The Infirmary, Rochdale,
February 5th, 1889.*

[We are afraid no word of ours would have much weight with the person who forms the hero of the incident, but if our disapproval and that of all right-minded people will influence him or his like, they may rest assured they have it and have richly deserved it. If all the members of the medical profession grasped the subject with the clearness of Mr. Pixton Walker, one of our great difficulties would be removed.—ED. J.B.D.A.]

The Museum at the next Annual Meeting in Brighton.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—Mr. C. S. Tomes has made a suggestion which is so good that I have no doubt the Museum Committee will adopt it—viz., that members of the Association should be asked to save all teeth they

may extract for Rigg's disease between now and August, and send them to the secretary, with short notes of their history. Much important information would be thus gained. The teeth should be washed, great care being taken that no adherent particles are removed.

As the Museum Committee will not meet until the end of February, a whole month would be lost and many very valuable specimens might be thrown away. I therefore take upon myself the responsibility of making the request through the Journal.

If any member has a suggestion to make with regard to the Museum would he communicate with me, so that it may be brought before the Committee at its first meeting.

Yours faithfully,

J. H. REDMAN,

Hon. Sec. to the Executive Committee.

61, Old Steine, Brighton.

APPOINTMENTS.

JAMES MACKINTOSH to the Senior Dental Staff of the Edinburgh Dental Hospital, *vice* Matthew Finlayson, L.D.S., deceased.

HENRY G. READ, M.R.C.S., L.R.C.P., L.S.A., L.D.S.Eng., has been appointed Assistant Dental Surgeon to St. Bartholomew's Hospital.

At the last quarterly court of the governors of Addenbrooke's Hospital held on December 31st, 1888, W. A. RHODES, L.D.S.I., and ALFRED JONES, L.D.S.I., were unanimously elected Hon. Dental Surgeons of that Institution for a term of six years.

J. F. COLYER, L.D.S.Eng., to be Demonstrator of Cohesive Gold Filling to the Dental Hospital of London.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

Subscriptions to the Treasurer, 40, Leicester Square.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE.—All communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

No. 3.

MARCH 15, 1889.

VOL. X.

Effective Legislation.

THERE seems to be a bad time coming for the "unspeakable quack;" indeed, if we are to believe all we read, the shoe has begun to pinch already, and that in a most unexpected quarter. America, the land of his adoption, has turned upon him, so writes the New York correspondent of the *Lancet*, and no one who knows cousin Jonathan will be surprised to hear that the most democratic country in the world has not been troubled with mawkish qualms about the "inalienable rights of man," "vested interests," or any such sentimentalities. "In many states laws have been passed regulating the practice of medicine." Mark what follows: "the result has been that quacks have been driven out of practice. In Illinois more than 3,000 doctors, so-called, were compelled to take down their names and retire to other business, or leave the State. Recently a person practising medicine in the State of West Virginia as an

eclectic was prosecuted for violation of the laws relating to the practice of medicine. The State Courts, in which the case was tried, all decided against him. Whereupon he appealed to the Supreme Court of the United States. This Court has just handed down its decision, sustaining the State Courts. The result of this decision will be most salutary. All of the States will now be free to legislate on this subject, and quackery will be driven from the country, at least its grosser forms."

Happy Illinois ! Three thousand quacks packed off about their business by a scratch of the pen ! Why, there's been no such drastic legislation since St. Patrick ordered the reptiles out of Ireland—even the "eclectic," who, we take it, is a kind of amphibian, a missing link between your true quack and your registered practitioner, could not make any stand against this legislative onslaught ; he struggled a little, but to no purpose. It is a notable fact that these quacks have had to make a speedy choice between adopting some other calling or banishment—no subterfuges, no sly circumventions of the act ; they must leave quackery or Illinois. Who can doubt what their choice will be ? What "gentleman of fortune" ever dreamt of returning to the slow laborious paths of sober industry ? They will choose exile, since it is in exile alone that they may tell the credulous world of the miraculous cure for all the ills that flesh is heir to, and of which each one of them is the only true and original possessor ; and after all is there not hospitable Britain, "where the law is tender-hearted, and the liar is at rest" ? We hear rumours of a Medical Authorities' Discipline Bill, by which all bodies granting diplomas shall have discretionary power to cancel them ; this salutary step will, however, only touch those who misbehave after having obtained a diploma. It is not the custom in England for the law to be always interfering with people, and penal clauses are the abhor-

rence of our legislators. A bill bristling with scarifying enactments by which the bold advertiser should be caused to evict himself with his hoarding, his show-case, and his imitation Americanisms in fact, such an act

“ . . . as dentists dream
On summer eve by haunted stream,”

would have very little chance of ever becoming the law of our land ; still for all that we are not so much worse off than our neighbours. To take the case of Illinois : before this reported exodus of the 3,000, not counting those who evaded the law and those who hid from the storm, there must have been one quack doctor in every thousand inhabitants. It was indeed time for heroic treatment.

Shock after Dental Operations.

THE Pennsylvania Odontological Society has recently had the opportunity of listening to an able exposition of the interesting subject which forms the heading of the present article. Dr. Trueman, who was the reader of the paper in question, included under this heading not merely the collapse which may follow the excitation of the emotions consequent upon severe pain inflicted during an operation, but also the secondary prolonged depression of the mental powers and of the circulatory system which may be traced to injudicious prolongation of operations in which a lesser degree of pain—perhaps only annoyance or discomfort, or even the constant anticipation of pain in timid individuals—is protracted over a considerable space of time. He enforced his argument by citing the case of a girl who had undergone treatment at the hands of an experienced and able operator of deservedly high reputation both in America and in other countries. This young lady persuaded the distinguished specialist to continue an operation which involved a good

deal of pain, for three hours at a sitting. After two hours' rest she again submitted herself to treatment, and, after an hour, symptoms of collapse appeared, and the operator insisted on suspending proceedings. On the route home matters became worse, and she remained in a "stupid condition" for several days and finally developed a nervous fever which lasted for months. The young lady must have been very foolish to urge on the professional man to make a trial of her strength which it was quite unequal to sustain, and the dentist was, we have no hesitation in saying, far too easily persuaded. A trained medical man should judge for his patient, and he is not exonerated, by urgency on her part, from blame if he consents to submit her to an ordeal for which she is physically unfit. Of course we have not before us his side of the story, but we cannot conceive that anything can excuse such an abrogation of his own better judgment. But though this is an extreme case, is it not a fact that in the ardour for accomplishing feats of manipulative dexterity operators do, or did, not unfrequently undertake lengthy and painful operations that are a severer tax upon the endurance of the patient than ought to be imposed?

We agree with Dr. Trueman that operations lasting five or six hours are fortunately much rarer than they used to be, and we imagine that most of our readers will endorse his opinion that two hours is quite as long as any operation should continue, and his advice that a day or so should elapse between such operations is likely, if followed, to minimise the nervous consequences. The shock accompanying extractions without an anæsthetic is, as our author points out, intensified by the horrors of anticipation, and he deprecates the practice of extracting many teeth at a time. There is no doubt that the less time that is allowed to intervene between the sentence and the execution in cases of extraction the better for the patient.

The subject is of very great interest, and Dr. Trueman's paper will well repay perusal by those who take an intelligent and liberal-minded view of their duties towards their clientèle.

ASSOCIATION INTELLIGENCE.

The Representative Board.

THE Representative Board met on March 2nd, J. SMITH TURNER, Esq., in the chair. The following members were present :—Messrs. J. Ackery, Storer Bennett, F. Canton, W. H. Coffin, W. Hern, S. J. Hutchinson, L. Matheson, G. W. Parkinson, C. S. Tomes, Felix Weiss, C. West, E. Lloyd Williams, A. J. Woodhouse and the Hon. Secretary, for London ; J. H. Redman, G. Cunningham, W. A. Rhodes, Morgan Hughes, S. L. Rymer, J. A. Fothergill, R. T. Stack, W. Bowman McLeod, J. T. Browne-Mason, Rees Price, J. Fenn Cole, W. H. Waite, J. L. Pike, J. Cornelius-Wheeler, and T. E. King, for the Provinces.

The following report, sent up by the Business Committee, was read, as being the opinion of that Committee on the question of the expediency of moving in the matter of granting higher degrees in dentistry :—

That after mature consideration, the Business Committee cannot see its way to recommend any measure for obtaining higher qualifications in dental surgery, other than that already provided by the diploma of the L.D.S. It having been proposed and seconded that the report be accepted, a lengthy discussion took place (members are referred to pages 568 and 805 for the previous action in the matter).

The HON. SECRETARY read the original resolution sent up by the Scottish Branch (see page 568), and said that it had received the support of three other branches.

Mr. McLEOD read and supported the following resolution for the Scottish Branch : "The Scottish Branch regret very much to find, from the resolution submitted to the Representative Board at this meeting, that the Business Committee have misapprehended entirely the purport of the overture sent by them from their Annual Meeting, 1888, to the Representative Board, and while accepting the conclusion of the Business Committee, re-

serve to themselves the power of re-introducing the overture at a more convenient season."

Mr. REES PRICE read and spoke to the following resolutions from the West of Scotland Branch :

"That this meeting of the West of Scotland Branch regrets that the Business Committee have misapprehended the meaning of the resolution submitted to them by the Scottish and West of Scotland Branches, in the summer of 1888. It further regrets that apparently no means have been taken by the Business Committee to learn from the members of the Association in Scotland the real purport of these resolutions. That this meeting, in the meantime, accepts the conclusions of the Business Committee, while reserving to itself powers to take such action as it may think fit."

After a very lengthy and exhaustive discussion, the report of the Business Committee was accepted with only one dissentient.

The following report was read, it being the recommendation of the Sub-Committee appointed at the last Board meeting to consider the question relating to papers, &c., at the Annual Meeting (see page 806) :

BRITISH DENTAL ASSOCIATION,

REPRESENTATIVE BOARD,

March 2nd, 1889.

Provisional recommendations of Sub-Committee on Mr. Dennant's motion appointed by the Board, December 1st, 1888.

That the full title of a communication intended for the General Meeting be sent to the hon. secretary, if possible, at least six weeks in advance ; that an abstract of every paper offered shall be in hand a fortnight before the meeting, to be accompanied by the paper itself when proposed to be read in full or in part.

That each abstract and paper shall be submitted to one or more "Special Referees" selected by the Publishing Committee from a body of Literary Referees consisting of ten members or others elected annually at the General Meeting. The Publishing Committee to decide upon the report of the referees as to the acceptance of papers, and whether to be read by abstract, in full, or otherwise.

That the reading of a paper shall not exceed thirty minutes, nor of an abstract ten minutes ; and that speakers in debate and authors in reply shall be limited to ten minutes each, except by the express wish of the meeting.

That when the number of papers before the meeting is greater than in the opinion of the majority can in sequence be duly considered, the presiding officer shall resolve the meeting for a specified time-

into two or more sections, before which the business can proceed simultaneously ; such sections, however, to have no powers or functions not specially delegated to them.

J. DENNANT.

G. CUNNINGHAM.

C. S. TOMES.

MORGAN HUGHES.

S. J. HUTCHINSON. W. H. COFFIN.

It was decided that the report be printed in the Journal, and discussed at the next meeting of the Board, and that if it be then approved, ten referees be appointed at that meeting.

The report of the Finance Committee was received and adopted, involving firstly, the transfer of the banking account to the Hanover Square Branch of London and County Bank. Secondly, that all cheques in future shall have two signatures, viz.: the Treasurer, and either the President of the Representative Board, or the Hon. Secretary of the Association.

The balance sheet of the Association will be found on page 137, together with a detailed statement by the Hon. Treasurer.

The Treasurer reported a balance of £73 3s. 6d., and that only 185 members had paid their subscription for this year.

Mr. REDMAN reported the arrangements made about the Annual Meeting. These will be found elsewhere.

The attention of the Board was called to the fact that some qualified dentists, whose names appeared in the Medical Directory, were not on the Dentists' Register, and also to some cases of probable fraudulent registration.

Mr. REES PRICE reported that Mr. Gray, of Glasgow, had pleaded guilty, and that the penalty would be named on the 6th inst.

Mr. BOOTH-PEARSALL gave notice of the following motions that he would move at the next Board meeting :

I.—That an editor's box be designed and made for the Annual Meetings, so that all papers, MS., and other matters of interest can be placed therein, which relate to the Annual Meeting of the British Dental Association and to the Journal of the British Dental Association, and that this box shall in all cases be placed on the table in front of the chair at the meetings, or at such other place or places at the meeting as may seem desirable.

II.—That the names of the Honorary Secretaries of Branches shall be added to the Business Committee in all future lists of members of the British Dental Association.

III.—That the names of the Honorary Secretaries of Branches of

the British Dental Association shall be added to the Committee of the Benevolent Fund in all future lists of members published by the British Dental Association.

- IV.—That the members of the Representative Board shall formulate a code of dental ethics, the same to be presented to the members of the British Dental Association, at the Annual General Meeting in August, for approval and amendment.

The following gentlemen were elected members of the Association:—J. H. Larbalester, L.D.S.Edin., Southampton; Harold Murray, L.D.S.Eng., Hampstead.

Treasurer's Report, as received and adopted by the Journal and Finance Committee.

IN presenting the accompanying Balance Sheet for inspection, there are one or two items, when compared with the last Balance Sheet, that require a little explanation.

The sum of £150 3s. 6d. for expenses of the Annual Meeting is made up chiefly of the following:

Annual dinner, £57 odd; catalogue of Museum, £29 odd; sundry expenses—carpenters, plumbing, gas fitting, &c., £47 odd; which will account for the difference of the present amount and the £10 15s. of last year.

The cost of printing and stationery this year is £120 7s., as compared with last year £84 13s.; this difference is owing chiefly to the following amounts:

Three geographical registers, £33; extra cost of List of Members and Transactions.

Our auditor considers the £200 goodwill of Journal rather too high, and it has been suggested that instead of 7s. being taken from the general fund on account of Journal 8s. shall be taken, and this extra shilling be applied as a sinking fund to clear off £100 of the £200.

It is also suggested that our bankers should be changed in order that, when advisable, we may place money in deposit, our present bankers giving no interest on deposit accounts; and it is also suggested that for the future all cheques shall be signed not only by the Treasurer, but by the President of the Representative Board or the Hon. Secretary.

THE BRITISH DENTAL ASSOCIATION.
Receipts and Expenses Account for the year ended 31st December, 1888.

Dr.									Cr.
	<i>General Account.</i>				<i>General Account.</i>				
To Rent...	...	...	£ s. d.	£ s. d.	By Subscriptions	...	...	£ s. d.	£ s. d.
" Secretary—Salary	...	...	25 0 0	...	Less Amount credited to " Association	...	...	724 1 6	
" Stationery and Printing	...	...	50 0 0	...	Journal " Account below	...	...	241 7 2	
" Postages and Sundries	...	...	120 7 0	...	<i>Association Journal Account.</i>				482 14 4
" Expenses of Annual Meeting	...	...	33 15 0	...	" Subscriptions as above	...	...	241 7 2	
" Audit	...	...	150 3 6	...	" Sale of Copies of Journal	...	...	55 9 0	
" Legal and other Expenses, <i>v. Bradley</i>,	...	...	5 5 0	...	" Advertisements	...	...	284 4 2	
Partridge & American Dental Institute	...	...	122 13 2	507 3 8	" Deficit carried down	...	...	581 0 4	
								74 8 7	
<i>Association Journal Account.</i>									
" Printing and Publishing	...	...	474 1 7						
" Salaries, Reporting, &c.	...	...	156 18 0	630 19 7					
				£1138 3 3				£1138 3 3	

THE BRITISH DENTAL ASSOCIATION.

Dr.	<i>Balance Sheet.</i>				<i>1st January, 1889.</i>				Cr.
To Balance from last Account	884 10 9		By Cash in hand and at Bankers	...	...	610 2 2	
" Less Deficit brought down	74 8 7	810 2 2	" Goodwill of Journal	...	...	200 0 0	
				£810 2 2				£810 2 2	

Examined and compared with the Books and Vouchers, and found correct,
18th February, 1889.
J. W. BUTCHER, Accountant and Auditor.

Midland Counties Branch.

A MEETING of this Branch was held on the 23rd of February at the Swan Hotel, Bolton. About forty members attended. Among those present were Messrs. T. E. King (President, York), H. Quinby, W. H. Jewitt, R. Edwards, W. Mapplebeck, W. Ladyman, M. Alexander, W. H. Waite (Liverpool), T. Mansell, W. Shillinglaw (Birkenhead), J. S. Dickin (Southport), T. Murphy (Bolton), D. A. Wormald (Bury), S. Wormald (Stockport), T. Wormald (Oldham), J. Lee Pike (Sheffield), J. C. Storey (Hull), W. E. Harding (Shrewsbury), I. Renshaw (Rochdale), G. Brunton, W. Armin, J. C. Birch (Leeds), J. Taylor (Warrington), C. Rippon (Huddersfield), Geo. Frost (Pendleton), W. Broughton (Eccles), F. W. Minshall (Salford), A. B. Wolfenden (Halifax), E. J. Ladmore (Bradford), J. H. Jones (Ashton-on-Mersey), W. Kelly, W. Dykes, E. H. Williams, E. Houghton (Manchester).

Mr. HARDING introduced the subject of electricity as a motive power for the dental engine. He referred to the "Detroit" motor, which is propelled by four accumulators, there being sufficient energy to run the engine eighty consecutive hours. Three cells are sufficient for the electric mallet. He also described Dr. Bonwill's method of filling teeth with amalgam, and explained how better results are obtained by condensing with Japanese bibulous paper intervening between the condensor and the filling, by which means all excess of mercury is readily removed. He then referred to the antiseptic treatment of dead roots of teeth, and also to the advantages of immediate root filling.

Mr. R. EDWARDS read an interesting paper, illustrated by large diagrams, on the use of Bonwill's articulator in the construction of artificial dentures on scientific principles.

Mr. T. MURPHY introduced a most interesting case of the replacement of both upper central incisors in the mouth of a girl ten years of age. The teeth had been knocked out by falling off a chair. The child was taken to him fifteen hours after the accident and the teeth produced. He proceeded by cleansing out the sockets, and the teeth were gently but forcibly replaced. When quite in position he applied a plastic splint, made of ordinary modelling composition, to be worn over the teeth until perfect union had taken place. The child was produced for inspection, and it was found that the teeth were slightly elongated but perfectly firm and sound, and there was no discoloration. Four months

have elapsed since the accident, thus proving the operation to have been a successful and highly gratifying one.

Mr. QUINBY referred to a case of a girl, aged thirteen years, who had a tooth knocked out by a carriage accident. She was taken to him, when he replaced the tooth. It had done two years' service, and was likely to be useful for some time to come.

Mr. BRUNTON read a paper on Howard's "Extended method of administering Ether," and its utility for surgical operations on the mouth whilst the patient is under its influence. He described the patient lying on a table or couch, to which an extension has been fixed, and which may be depressed by a hinged arrangement. The head of the patient is placed on the extension, and when perfect anæsthesia has been obtained, the hinged extension is lowered and fixed, thus depressing the head below the level of the body. He maintained that in operations performed under these conditions there is less danger of suffocation, vomiting, or syncope.

Mr. BIRCH stated that he had seen Mr. Brunton extract a number of teeth under the above conditions, and recognising the advantage of the method he had adopted it himself, with very satisfactory results.

Mr. STOREY shewed models representing a method by which unnatural protrusion of the teeth from thumb-sucking and other causes may be remedied in a very short time.

Mr. BRUNTON shewed Taggart's corundum point maker, an oxy-hydrogen blow-pipe, improved mercury drop bottle, trays for taking impressions for "crown" cases, Dr. Elliott's disc carrier, Abbot's mallet, and a cheap rubber dam holder, viz., two penny letter clips with an elastic band attached.

Mr. HARDING shewed some very fine Swiss jewellers' brooch-drills, which he finds useful in carrying dressings up root canals.

Mr. HOUGHTON shewed a hypodermic syringe, made by Weiss, King Street, Manchester.

Mr. BIRCH exhibited an electric motor for the engine, with a very portable storage battery.

The various papers elicited interesting discussions, and it was acknowledged to have been one of the most instructive meetings which have been held for some years.

Votes of thanks were accorded to the President, to the readers of the papers, and to Mr. Murphy for the arrangements which he had made for the comfort of the members.

At the Council Meeting held in the afternoon, Mr. Quinby stated that he proposed inviting the members to a reception at his house the night before the annual meeting of the Midland Branch, to be held in Liverpool on the 17th May. On the day of the meeting he will invite the members to luncheon with him, and on the Saturday he intends chartering a steamer and taking the members down the River Mersey and back, so that the docks, &c., may be better viewed, and up the river to see the Manchester Ship Canal.

The following members were duly elected to the British Dental Association and Midland Branch:—Messrs. E. A. Councell, E. J. M. Phillips, G. A. Williams, Liverpool; to the Midland Branch only:—Messrs. W. Matthews, M. Quinby, J. Royston, Liverpool; T. Mansell, Birkenhead; F. W. Minshall, Salford; W. J. Pidgeon, Bootle.

Southern Counties Branch.

THE Spring Meeting of the above Branch was held at the Town Hall, Brighton, on February 23rd last.

The afternoon was principally devoted to the meetings of the various committees in connection with the Annual Meeting of the Association at Brighton next August, and many of the members had a heavy day's work, which was agreeably broken by a most excellent dinner at Booth's Restaurant in East Street.

Mr. BACON, the President-elect of the Branch, took the chair, and the following gentlemen were present at the Meeting:—Messrs. James Smith Turner, Morton Smale, Joseph Walker, Laurence Read, Arthur Underwood and Walter Coffin (London), J. Den-nant, J. H. Redman, J. E. Welch, Walter Harrison, Octavius Fox, T. H. Elliott, Douglas Caush, W. R. Wood, jun., and J. N. Stoner (Brighton), W. B. Bacon (Tunbridge Wells), E. T. Cooksey (Worthing), F. J. Van der Pant (Kingston), J. Henry Whatford (Eastbourne), G. Olive Richards (Richmond), James Rymer (Maidstone), and Morgan Hughes (Croydon).

The SECRETARY having read the minutes of the previous meeting,

Mr. CAUSH showed some beautiful micro-photographs of exos-tosed teeth.

Mr. JAMES RYMER showed an apparatus he had successfully used to keep *in situ* a lower incisor, which had been loosened by

an accident, which at the same time fractured the outer wall of its alveolus.

Mr. WALTER HARRISON was then called upon for his paper on "Temporary Fillings."

An interesting discussion followed the reading of the paper, in the course of which

Mr. DENNANT said he found that benzoin was a pleasant substitute for gum mastic. He used it dissolved in spirits of wine, and when he desired a more permanent dressing would also incorporate with it some of the phosphate filling powder.

Mr. LAURENCE READ joined issue with Mr. Harrison in his condemnation of the red base-plate rubber as a filling material. Some of the best operators he knew were in the habit of filling interstitial cavities in bicuspid and molars with it temporarily, and filling permanently in three or four months' time, when the teeth would be found to be nicely separated, allowing plenty of room for contouring.

Dr. WALKER had found the admixture of tannic acid with benzoin and spirit most useful, and thought the addition of the tannic acid a distinct advantage in many cases.

Mr. READ objected to the tannic acid on account of the dirty discoloration of the dressing it caused.

Mr. JAMES RYMER recommended the iodoform paste as a lining to cavities, and gutta percha as the temporary filling. He did not consider that Mr. Harrison should have classed Sullivan with the temporary fillings. He also advocated caution in using oxychloride stopping, as he had had cases of abscess subsequent to their use.

Mr. HARRISON, in his reply, said that he did not think that in the case he had referred to—the misuse of red base-plate rubber—that it was intended to be used in the manner referred to by Mr. Laurence Read, and that with regard to Sullivan, he himself was in the habit of cutting away the surface and filling with gold.

Mr. BACON then conveyed the thanks of the meeting to Mr. Harrison for his very practical paper, and asked Mr. Dennant to take his place in the chair, as he had to leave to catch his train.

Mr. JAMES RYMER then read his paper "On some characteristic Changes in the Jaws and Teeth dependent upon General Diseases."

Mr. MORGAN HUGHES, while thinking that we ought to be very much indebted to Mr. Rymer for his very suggestive paper, thought that in some instances he seemed to be trying to prove too much, and that in others his statements were not sufficiently

supported by proofs. He could understand that there might be changes absolutely characteristic of diseases such as gout or syphilis, but did not think the distinction drawn between phthisical and strumous teeth was possible when the diseases themselves were so nearly allied. Again, Mr. Rymer was mistaken in thinking that the loosening of the temporary teeth in rickets was unknown till quite recently outside of Guy's Hospital, as Mr. Hughes had certainly been taught the same thing at his hospital.

Mr. WALTER COFFIN said that his pre-conceived notions of what changes he might expect to find in the teeth of phthisical patients had been completely upset by the inspection of a large number of mouths at the Brompton Consumption Hospital, as he had found no special type of teeth predominant.

Mr. LAURENCE READ thought too much must not be attributed to disease in changing the shape of the jaws, and that bad habits in childhood, such as thumb-sucking, often produced considerable deformity.

Mr. HARRISON and Mr. RICHARDS also took part in the discussion.

Mr. RYMER replied to the various speakers, and pointed out that he had consulted the best authorities possible for his statements, and that his paper was not simply the result of his own observations.

The CHAIRMAN having conveyed the hearty thanks of the meeting to Mr. James Rymer, the proceedings terminated.

MORGAN HUGHES, *Hon. Sec.*

West of Scotland Branch.

THE usual monthly meeting was held in the Library of the Faculty of Physicians and Surgeons, St. Vincent Street, Glasgow, on Thursday, February 28th, at 8 p.m., JAMES CUMMING, L.D.S.Glas., President, in the chair. After the usual preliminary business, Mr. Andrew Wilson, President of the Scottish Branch, brought forward the suggestion that the annual meetings of the West of Scotland and Scottish Branches should be held jointly for the future. Messrs. Bowman Macleod and J. S. Amoores also urged that this should be done, and it was favourably received by the meeting.

The following resolution of the Business Committee, which was

submitted to the Representative Board meeting on the 2nd of March, was then considered, and runs as follows :

"That, after mature consideration, the Business Committee cannot see its way to recommend any measure for obtaining higher qualifications in dental surgery other than that already provided by the diploma of the L.D.S."

After discussion the following resolutions were agreed to :

"That this Meeting of the West of Scotland Branch regrets that the Business Committee has misapprehended the meaning of the resolutions submitted to them by the Scottish and West of Scotland Branches in the summer of 1888. It further regrets that apparently no means have been taken by the Business Committee to learn from the members of the Association in Scotland the real purport of these resolutions. This meeting in the meantime accepts the conclusions of the Business Committee, while reserving to itself power to take such action as it may think fit."

"That a Committee consisting of Messrs. Oswald Fergus, J. A. Biggs, and Rees-Price be appointed to confer with the committee formed by the Scottish Branch, and to report to the meeting in March."

The PRESIDENT then called upon Mr. Wm. DALL, L.D.S. Glasgow, for his communication, "Porcelain Fillings, plain and gum coloured," which he then read.

Western Counties Branch.

THE April meeting of the council of this Branch will be held at the Royal Hotel, Weston-super-Mare, on Saturday, April 27th, at 3 p.m. The Hon. Secretary will be glad, if gentlemen having new members to propose, will send him the nomination papers beforehand.

HENRY B. MASON, *Hon. Sec.*

ORIGINAL COMMUNICATIONS.

The Bonwill Articulator.

By R. EDWARDS, M.R.C.S., L.D.S.

MR. PRESIDENT AND GENTLEMEN,—I am sure you will all agree with me that as a rule the utility of an artificial denture depends upon its similarity to the natural one. I shall, therefore, offer no apology for introducing to your notice a few points of interest connected with the formation and movements of the human jaws, more especially since the adaptation of these peculiarities to arti-

ficial dentures produce the most satisfactory results. I should like to say at the outset that I have nothing original to communicate; all my information is culled from an article in Harris' "Principles and Practice of Dental Surgery," twelfth edition, contributed by the inventor of this articulator.

Dr. W. G. A. Bonwill, who is well known on this side of the Atlantic from his many useful mechanical appliances and skill, bases his observations upon extensive practice and the examination of over 2,000 skulls.

In the normal typical denture we should find from twenty-eight to thirty-two teeth arranged so that no two opposing teeth directly antagonise, but each tooth impinges upon two. This arrangement when a tooth is lost prevents any great irregularity taking place, and provides that the corresponding tooth in the other jaw will still retain some of its usefulness. The bicuspid and molars run in almost a direct line backwards, while the front teeth are ranged along a curve.

Now comes a point which is worthy of special attention. Imaginary lines drawn from one condyloid process of the lower to the other, and from each condyloid process to the median line at a point where the two lower incisors meet, would measure on an average four inches, the variation being not more than the fourth of an inch. This triangular arrangement provides for the greatest number of teeth being near to the centre of motion, and enables all the teeth on one side of the mouth to come into direct apposition during the lateral movements of the jaw. If the lower maxilla

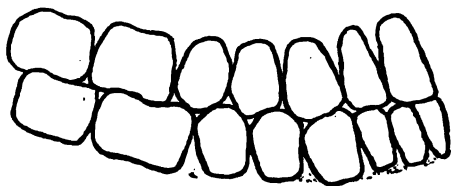


FIG. 7.

be brought to the left, the left condyle does not move backwards, but simply rotates in its socket; the right condyle slides forward almost half an inch at its farthest limit. The incisors on the left meet edge to edge, and the outer and inner cusps of both upper and lower will antagonise (Fig. 7). On the right, the inner cusps

of the upper come in contact with the outer of the lower, and the incisors do not touch.

You cannot masticate with but one side at once—hence the reason for so few teeth meeting on the right side. But it is absolutely necessary that there should be some points of contact on the right side, so as to enable the greatest number of muscles to be brought into action simultaneously. If this provision had not been made there would result that peculiar movement of the jaw which makes it so difficult to adjust teeth for the aged.

But perhaps the most important observation which has a direct bearing upon the articulation of an artificial denture is the relation which exists between the depth of overbite, the length of the cusps of the bicuspid and molars, and the curvature upwards of the teeth at the ramus.

This diagram (Fig. 2) will enable me to express myself a little clearer.

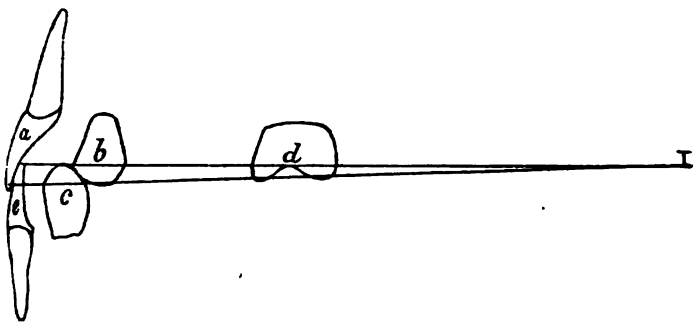


FIG. 2.

Supposing the depth of overbite to be the eighth of an inch from the cutting edge of the inferior central incisor *e* to that of the superior central *a*, the cusps of the bicuspid will be a little less and those of the molars still less ; so that if the teeth extended as far back as T the surfaces would be flat. Now, if the bicuspid and molars were arranged in the same place as the incisors, when the lower was carried forward, say to the left, for the purpose of mastication, the right having advanced from a quarter to half an inch, the teeth on that side would not touch. But, as I have before stated, some of the teeth do come in contact, and this is provided for by the curvature upwards at the ramus (Fig. 6).

The relation of the teeth during mastication on the left side is represented on Fig. 7.

Of the numerous articulators which have at different times been devised, this one, which I now hand round, will be found to represent most perfectly the complicated movements of the human jaw (Fig. 1).

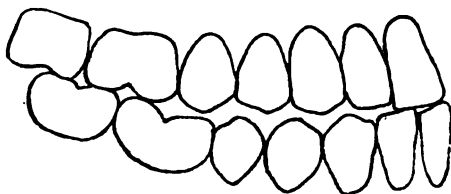


FIG. 6.

It consists of two parts, a base with its various movements, and two bows. But one base is required for any number of bows. The lateral movements forbid the use of a prop to keep the bows apart, and in practice it will not be found necessary. At first sight it would appear as if the lower moved in the wrong direction, but on closer examination, you will find it corresponds almost exactly with the movements of the maxilla.

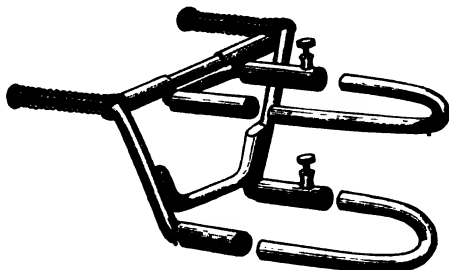


FIG. 1.—Anatomical Articulator.

One decided advantage it possesses is, that you can see the lingual surfaces of the teeth, and thus satisfy yourselves that both the inner and outer cusps articulate properly.

When fixing the models to the articulator, with the wax bites attached, place the lower model on the lower bow, and with a

pair of callipers measure the distance four inches from each condyle to the median line; draw over the upper bow, fix in position with plaster, and when set, fasten the lower bow in the same way. To secure the height of bite for future reference, place one point of the callipers on the upper model and the other on the lower, and mark. Repeat this on the upper or lower model alone. When cutting off the wax leave a section at the back, to keep the bite open while the incisors and bicuspid are being fitted in place. Grooves similar to those represented on Fig. 5 should



FIG. 5.

be made on the bicuspid and molars before fixing in position. The depth of groove will of course vary with the depth of underbite. The grooves in the upper should be made nearer the buccal side, those in the lower nearer the lingual side. The curvature at the ramus should be so arranged, that when the lower is carried to either side for the purpose of mastication the anterior cusp of the second molar in the lower (on the side not in use) moving forwards will strike the posterior cusp of the first molar in the upper, apparently moving backwards. This equalises the pressure over the whole denture during active service, helps materially to remedy the tilting movements patients so often complain of, and renders mastication more perfect and complete. I am very much afraid that my feeble attempt to condense so much matter into so short a paper has only brought confusion into your minds. Any gentleman feeling interested in the subject will find Dr. Bonwill's article well worth a careful perusal.

WE are requested to call the attention of members to the fact that it is earnestly hoped that gentlemen wishing to read papers at the ensuing Annual General Meeting should communicate with as little delay as possible with the Hon. Sec., Mr. Morton Smale, 89, Seymour Street, W.

About Stanley.

BY ALFRED PRAGER, L.D.S.

ANYTHING relating to the *personnel* of the illustrious explorer as to whose fate the world is now watchfully awaiting definite news will, I feel certain, be of interest to the readers of this Journal.

When, some three or four years ago, Mr. Stanley first placed himself under my professional care, I was at once struck, as everyone must be on first meeting this distinguished man, by his determined and commanding appearance. It is not easy to lose one's first impression of the sturdy courage and indomitable will that are so markedly stamped upon his features. Of Mr. Stanley it may indeed be said that he has "an eye like Mars, to threaten and command," and on meeting and speaking with him it is not difficult to comprehend his remarkable success as a leader of men in the most dangerous adventures. I might tell of his power of enduring physical pain, but the following will doubtless be of greater interest.

On an occasion when Mr. Stanley was speaking to me of the liability to dental disorders of the European when in Africa, he alluded to his famous predecessor, the late Dr. Livingstone, as an instance.

"I believe he might have been alive to this day," said Stanley in his quiet but forcible manner, "were it not for his sufferings, caused mainly, I believe, by the loss and disease of his teeth." This, Mr. Stanley furthermore gave me to understand, was his conviction, and he expressed regret that Livingstone was unable to benefit either from remedial or reconstructive dental treatment.

Amongst other things, Mr. Stanley described to me the very careful manner in which the African savage cleanses his teeth, using for the purpose little sticks or roots, similar to our own dragon canes. I have also had the advantage, at different times, of gleaning from Mr. Stanley other interesting accounts of savage dentistry, but these I cannot at the moment recall.

The hero of the "Dark Continent" is, as I have often seen stated before, as a rule reticent, but by no means is he taciturn. His silence is of that kind which is often more eloquent than words, and promises something worth hearing when broken. There is a twinkle in the piercing eyes and a smile often lurking at the corners of the mouth when Mr. Stanley converses, which are evidence that he could be, when in the mood, a capital *raconteur* with a keen sense of humour.

I last had the pleasure of a visit from Mr. Stanley early in 1887—a few days prior to his leaving London on his present perilous enterprise. When wishing him good-bye and a safe and successful journey he spoke with confidence of seeing me again in about eighteen months from then. In spite of the many pessimistic rumours that have been and still are rife concerning his fate, I feel quite convinced that, ere long, he will once more make his appearance, safe and sound.

On departing with his expedition he took with him, amongst his numerous and varied paraphernalia, a little professional *souvenir* of mine he accepted, in the shape of a complete equipment of dental remedies, with all necessary instructions for their application. I trust no occasion has arisen for their use in his own case; but I believe that Mr. Stanley has already in emergencies acted as an amateur dentist, so perhaps he may have found this outfit of some service amongst any afflicted savages in his other capacity of "medicine man" which he also sometimes fills.

That Mr. Stanley will have no objection to my writing about these matters I feel sure, for, like all really great men, he is nowise characterised by a desire to assume an exemption from mankind's common heritage of the ills of the flesh. Finally, that he is safe and well and will soon return to wear his added laurels, is, I am certain, the wish of all the readers of this Journal, shared in common with the rest of the world.

LEGAL INTELLIGENCE.

Carrick v. Gray.

Report of Proceedings in the SHERIFF COURT at Glasgow, before Sheriff BALFOUR, on 15th February, 1889.

THIS was a complaint laid under "The Dentists Act, 1878," "The Medical Act, 1866," and "The Summary Jurisdiction (Scotland) Acts, 1864 and 1881," at the instance of Mr. Samuel M. Carrick, solicitor, Glasgow (acting on behalf of The British Dental Association), against the respondent, which set forth—

That James Gray, residing at 3, Minerva Street, Glasgow, in the county of Lanark, has contravened "The Dentists Act, 1878," as amended by "The Medical Act, 1886," in so far as that he, the said James Gray, not being a legally qualified practitioner, and not

being a person registered under the said Dentists Act, unlawfully did, on or about 14th November, 1888, and within his dwelling house, at 3, Minerva Street, aforesaid, to and in presence of Alexander Morton, messenger-at-arms, 43, Renfield Street, Glasgow, and residing at Holmwood Cottage, Langside, and Daniel McDonald, formerly assistant to the said Alexander Morton, and residing at 31, Dunmore Street, Glasgow, take or use the name and title of dentist, or some other name, title, addition, or description implying that he, the said James Gray, was registered under the said Dentists Act, or that he, the said James Gray, was a person specially qualified to practise dentistry; and further, that he, the said James Gray, did, on or about said last-mentioned date, and still does, display at or near the windows of his house at 3, Minerva Street aforesaid, and affixed to said house, a sign-board, having painted thereon the following words or description, viz.,—

BEST ARTIFICIAL TEETH.

BEST ARTIFICIAL TEETH.

JAMES GRAY,

(Late with B. Sutherland)

Surgeon-Dentist.

TEETH EXTRACTED.

TEETH EXTRACTED.

Entrance round Corner, 3, Minerva Street.

and the said James Gray did, on said last-mentioned date, and still does, display above the door of the close leading to his residence at 3, Minerva Street aforesaid, a sign having painted thereon the following words or description, viz.,—

James Gray (late with B. Sutherland), Surgeon-Dentist, implying by the said several words and descriptions that he, the said James Gray, was registered under the said Dentists Act, or that he, the said James Gray, was a person specially qualified to practise dentistry, all in contravention of the aforesaid Acts, whereby the said James Gray has rendered himself liable to a fine not exceeding £20 sterling, or to be imprisoned for two months.

Mr. Carrick appeared in support of the complaint.

Mr. Alexander Russell, solicitor, Glasgow, appeared for the respondent.

The respondent having been called on to plead:—

Mr. RUSSELL: I have one or two preliminary objections to submit to your lordship. This complaint is laid under the

Dentists Act of 1878, the Medical Act, 1886, and the Summary Jurisdiction Acts 1864 and 1881. The Dentists Act of 1878 says: "From and after the first day of August, 1879, a person shall not be entitled to take or use the name or title of dentist (either alone or in combination with any other word or words), or of dental practitioner, or any name, title, addition or description, implying that he is registered under this Act, or that he is a person specially qualified to practise dentistry, unless he is registered under this Act." Section 4 gives the power in the Dental Association to prosecute, but excludes a private prosecution. That was repealed by section 26 of the Medical Act of 1886. This complaint is made at the instance of Samuel Macadam Carrick, Solicitor, 83, West Regent Street, Glasgow, and I think it may be assumed that Mr. Carrick is not acting in a private capacity or *ad vindictam publicam*. The respondent is therefore entitled to ask the capacity in which Mr. Carrick is acting. I think it is quite clear that this complaint is at the instance of the British Dental Association from correspondence my client had with them, and from the statements of the messenger-at-arms, when he called at my client's. My contention regarding that is borne out by the Summary Procedure Act, 1864, section 4, which provides a special form of complaint in schedule A. It states that the complaint should be by a Procurator Fiscal of Court (or other party entitled to prosecute with his concurrence), and in conjunction therewith should be read section 9 of the Summary Jurisdiction (Scotland) Act, 1881, which is as follows: "Every complaint at the instance of a private prosecutor or complainer under the Summary Jurisdiction Acts may be signed either by said prosecutor or complainer, or by a duly-qualified law agent on his behalf, and such law agent may, in the absence of the private prosecutor or complainer, appear in court and conduct the prosecution on his behalf." The construction from that is that the real complainer should be stated in the complaint and not merely the law agent. I make bold to say Mr. Carrick has never been within my client's premises, and he has never been injured by my client calling himself a surgeon-dentist.

The SHERIFF: Who do you say should be the prosecutor?

Mr. RUSSELL: Either the Dental Association or some one injured by my client.

The SHERIFF: Is that not the meaning of this section of the Act of 1886, which says that the prosecution may be instituted by a private person, and Mr. Carrick is a private person.

Mr. RUSSELL : I think that must be read along with the section in the Summary Jurisdiction Act, which says : " Any complaint at the instance of a private prosecutor or complainer may be signed either by such prosecutor or complainer, or by a duly qualified law agent," &c.

The SHERIFF : What do you deduce from that ? Every complaint at the instance of private prosecutor or complainer, under the Summary Jurisdiction Act, may be signed either by such prosecutor or complainer, or by a duly qualified law agent, on his behalf, and this is signed by a private complainer, who is also a law agent.

Mr. RUSSELL : I think the construction of that section is that the real complainer's name must appear in the complaint.

The SHERIFF : I understand the meaning of that section was to show that a complaint by a private party for poaching could be insisted on. It was to get over a judgment of the sheriff at Greenock, where it was held that the private prosecutor must appear.

Mr. RUSSELL : There was also the case where the fiscal of some burgh in the east of Scotland prosecuted in his private capacity and it was held to be incompetent.

The SHERIFF : Yes, but that was a complaint apart from his duties as fiscal. I do not see how you get over the provision in the Act of 1886, which says such prosecution may be instituted by a private person, and Mr. Carrick is a private person.

Mr. RUSSELL : It is clearly shown on the face of the correspondence that this is an action at the instance of the Dental Association against my client, and I make bold to say Mr. Carrick is not appearing here *ad vindictam publicam*.

The SHERIFF : Looking at it altogether apart from that, how are you damnified by Mr. Carrick appearing and not the Dental Association.

Mr. RUSSELL : I would like to know who my opponents are ; the dentist next door may be my opponent, and I would like to know that.

The SHERIFF : I have no doubt you are anxious to know, but I don't think that under the Act you are entitled to know, and I must repel your objection.

Mr. RUSSELL : My next objection is that the complaint is irrelevant and wanting in specification. The complaint bears that James Gray, residing at 3, Minerva Street, Glasgow, aforesaid, to and in presence of Alexander Morton, messenger-at-arms, 43,

Renfield Street, and residing at Holmwood Cottage, Langside, and Daniel McDonald, formerly assistant to the said Alexander Morton, and residing at 31, Dunmore Street, Glasgow, did take or use the name or title of dentist. Now I submit that Mr. Morton and his assistant were not misled; they were there at the instance of my friend's clients to try and entrap my client.

Mr. CARRICK: I do not suggest that I, or the messenger who acted on my instructions, were misled, and it is not necessary I should do so. A reference to the Dentists' Register showed me the respondent had no qualification, and I wished to find out whether the respondent held himself out to the public in any other way than by his signboard to be a dentist, and in the result I find he did, as stated in the beginning of the complaint. Your lordship will observe this is the only way we have of getting at these parties, over and above the misleading of the public. It is very hard that duly qualified practitioners, who have to undergo stringent examinations and pay fees, should be opposed by persons who practise and use the name of dentist without any Procedure qualification whatever.

Mr. RUSSELL: Further, it is not specific enough to say that the complaint is laid under three Acts—the Dentists Act, the Medical and the Summary Jurisdiction Act. I think I am entitled to ask under what section the complaint is based.

Mr. CARRICK: My friend's objection to the want of specification is trivial; almost every word of section 3 is quoted in the complaint, and I refer your lordship to section 5 of the Summary Act of 1864, which makes it unnecessary that I should be more specific.

Mr. RUSSELL: The *modus* is wanting in the first charge. Are there two charges in the complaint? If so, which section is the second charge under, and if there is an alternative charge it should be stated or shown. The latter charge is that he, the said James Gray, did on or about 14th November last, and still does, display on or near the windows of his house, at No. 3, Minerva Street aforesaid, and affixed to said house, a signboard, having painted thereon the following words or description, viz. :—

BEST ARTIFICIAL TEETH !

BEST ARTIFICIAL TEETH !

JAMES GRAY,
Late with B. Sutherland,

Surgeon-Dentist.

TEETH EXTRACTED !

TEETH EXTRACTED !

(Entrance round corner, 3, Minerva Street.)

And the said James Gray did on said last-mentioned date, and still does, display above the door of the close leading to his residence, at No. 3, Minerva Street, aforesaid, a sign, having painted thereon the following words or description, viz., "James Gray, late with B. Sutherland, Surgeon-Dentist," implying by the said several words and descriptions that he, the said James Gray, was registered under the said Dentists Act, or that he, the said James Gray, was a person specially qualified to practise dentistry, all in contravention of the foresaid Acts, whereby the said James Gray has rendered himself liable to a fine not exceeding £20 sterling, or to be imprisoned for two months. This, I submit, does not suggest an infringement of section 3 of the Act. The advertisement states only that the respondent had been with Mr. Sutherland, who may, or may not be, a registered or qualified practitioner.

The SHERIFF: If I read the complaint aright, it is that the respondent assumed the title by displaying at the windows of his house a signboard, having on it "Surgeon-Dentist," and he also had the sign painted on it "Surgeon-Dentist." They are cumulative, not alternative charges.

Mr. RUSSELL: Well, that to my mind does not suggest an infringement of the Act. My client does not say he is a dentist.

Mr. CARRICK: While it may be a little irregular at this stage of the case, I will, unless my friend objects, ask your lordship to examine two photographs of respondent's premises and signs which I got for the purposes of the case.

Mr. RUSSELL: I have no objection to your lordship examining the photographs.

The SHERIFF: He calls himself a surgeon-dentist.

Mr. RUSSELL: No; he says "James Gray, late with B. Sutherland, Surgeon-Dentist." The meaning is that James Gray was with B. Sutherland, a Surgeon-Dentist.

The SHERIFF: Well, all I can say is that if I was suffering from toothache and went along the street looking for a dentist, I would go up to the respondent's if I saw this sign.

Mr. RUSSELL: And I have no doubt your lordship would be very skilfully treated.

The SHERIFF: It can mean nothing else. For instance, no one looking out for apartments would go up there.

Mr. RUSSELL: My last objection is this: There is no *bonâ fide* patient of the respondent brought forward to state that he has been misled by that advertisement.

The SHERIFF: I don't think you require to show that any person has been misled by that.

Mr. RUSSELL: Those are all my objections.

The SHERIFF: I cannot sustain them. How do you plead?

Mr. RUSSELL: I plead guilty to the signboard and the sign; that is, I plead guilty to having a signboard with "James Gray, late with B. Sutherland, Surgeon Dentist," on it. I admit the correctness of the photographs of the sign before the court.

The SHERIFF: I do not know that I can take your plea, Mr. Russell. You must either plead guilty or not guilty to contravention of the statute, and I shall then be able to deal with the case.

Mr. RUSSELL (after conferring with his client): As at present advised, my client will plead not guilty.

The SHERIFF: Then I fix Wednesday, 6th March, as a diet of proof.

Wednesday, 6th March, 1889.

Mr. RUSSELL: This is the case, my lord, in which I appeared for Mr. Gray at last diet, when several preliminary pleas were stated, all of which were repelled by your lordship, and since that date I have arranged with my friend to plead guilty to the second charge, that is, from the words "and further, that he, the said James Gray," on page 2 down to "all in contravention of the aforesaid act" on the top of page 4. My friend has accepted that plea, and I suppose it is proper that it should be recorded.

Mr. CARRICK: Yes; I ask your lordship to record that plea, and I wish to say something about the matter of penalty.

Sheriff BALFOUR: It is all one charge, but there are three heads to it. Do you mean that he will plead guilty to this at the foot of page 2 down to the very end?

Mr. RUSSELL: Yes.

Sheriff BALFOUR: The meaning of that is, that he displayed these signboards on the windows of his house and the close.

Mr. RUSSELL: Quite so.

The following note was then made:—The respondent answered that he was guilty of having on the date libelled, displayed, and of still displaying, at or near the windows of his house, the signboard libelled, and of having on the same date displayed, and of still displaying above the door in the close leading to the residence, the sign libelled, all in contravention of the acts founded on.

Mr. RUSSELL: That is what I mean. I have no objection to that. Before your lordship imposes any penalty on my client, I have a few words to say on his behalf. First, regarding the nature of the offence to which he has pleaded guilty, there is no doubt about the fact of his having displayed this signboard, but I think after your lordship has seen the discharged indenture of his having served five years to the art or craft of a mechanical dentist with Mr. Sutherland, whose permission, I understand, he had to use the words, "late with B. Sutherland, Surgeon-Dentist," and the fact also of his having been for a period of thirteen months in the employment of one of the best surgeon-dentists in the city, who certifies to him being honest, attentive, and diligent in his duties, and a capable workman, I think that your lordship will be more lenient with him than otherwise you would have found it your duty to be. The public, I submit, have not suffered in the slightest degree by my client's actings. There is no averment of this, and I challenge my friend to bring forward a single patient of Mr. Gray's who has suffered in any degree by his actings. On the contrary, had it been relevant, I could have produced several patients of his who had their pain alleviated, and who were attended to as well by him as they would have been by any surgeon-dentist in the city of Glasgow. This is the first prosecution under this Act which has taken place in Glasgow, and I submit that that is another reason why the penalty should be a small one. Gray is a young man.

Sheriff BALFOUR: How old is he?

Mr. RUSSELL: Twenty-one years of age. He is not a man of means, and he is endeavouring to get on in the world. His sole reason for not being qualified at the present time is the lack of means, and it is his intention to go forward and be a dentist under the Dental Act.

Sheriff BALFOUR: He is very young; he has time on his side.

Mr. RUSSELL: Yes, but it shows the ambition of the man to get on in the world. I ask your lordship not to impose a penalty considering all these facts, and also considering the fact that the Crown is not benefited.

Sheriff BALFOUR: Where does the fine go?

Mr. RUSSELL: To the Dental Association.

Mr. CARRICK: The Act does not provide that.

Mr. RUSSELL: No. The Act provides that it goes into Mr. Carrick's pocket, which is the same thing. I ask your lordship merely to admonish the respondent.

Mr. CARRICK : I ask your lordship for a substantial penalty in this case. I am not disposed to follow my friend into the question of Mr. Gray's so-called professional qualification, or as to whether any member of the public has been injured by him. These matters are quite apart from the question before the Court. The Act was passed for the protection of the public, and its whole scope is to prevent any person who does not possess the proper legal qualification from holding himself out to be a dentist. It is no use for my friend to found upon the fact that this is the first case in Glasgow. That is true. Indeed, there has only been one previous case in Scotland, but I submit that the present is an aggravated case. Your lordship heard from my friend at last diet of certain correspondence which had passed between the respondent in the month of June last. The respondent at that time was styling himself "Mechanical Dentist," and the Secretary of the Association wrote him, pointing out in unmistakable language that he was contravening the Act, and if he continued to do so, he would be prosecuted. The respondent knew perfectly well what he was about, and simply altered the signboard to the terms mentioned in the complaint. This is not the case of a man acting in ignorance, but of one who has deliberately attempted to evade the statute; I therefore ask your lordship to impose a substantial penalty, and to give me the usual costs allowed under the Summary Jurisdiction Acts. I may mention to your lordship that in the previous Scotch case, to which I have referred, the accused was fined £5 with the alternative of seven days' imprisonment, and I submit that your lordship should at least impose as severe a penalty here.

Mr. RUSSELL : My client had on his signboard in June last, "James Gray, Mechanical Dentist," and at that time he was not aware of contravening any Act. To suit the Dental Association, or as he thought to suit them, he, with Mr. Sutherland's permission, put up his present sign, and I submit there is no aggravation whatever.

Sheriff BALFOUR : I impose a penalty of £5, with an alternative of fourteen days' imprisonment.

Mr. RUSSELL : Perhaps your lordship will allow Mr. Gray five weeks to pay this?

Sheriff BALFOUR : Very well.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—The Hon. Secretary of the West of Scotland Branch has shown me the proof of the report of the case of "Carrick v. Gray." In it the statement is made that I gave permission to Gray to use my name and qualification for the offending signboard. You would greatly oblige me by contradicting this. I saw Gray on the subject twice, and told him he could do as he pleased about the signboard, but that my name must be erased from it. Hearing then that the Association had the matter in hand, I took no further steps in regard to it.

I remain, yours faithfully,

B. SUTHERLAND, L.D.S.

108, *Renfield Street, Glasgow,*
March 11th, 1889.

REPORTS OF SOCIETIES AND OTHER MEETINGS.

The Odontological Society of Great Britain.

THE ordinary monthly meeting of this Society was held in its Rooms, 40, Leicester Square, on Monday, March 4th, Mr. HENRY SEWILL, president, in the chair; there was a large attendance of members, and several visitors were present.

Messrs. A. T. Croucher and Alfred Barnard were balloted for, and elected resident, and Messrs. W. R. Ackland, W. A. Rhodes, W. Breward Neale and G. O. Richards non-resident, members of the Society.

The LIBRARIAN announced the receipt of a parchment relating to the granting of a patent to Dubois de Chemant, for the manufacture of mineral teeth, in the reign of George III.

Mr. J. HOWARD MUMMERY read notes of a case of odontome of the upper jaw. A young lady, aged fourteen, wearing a lower regulation plate, said she felt something feeling like gum come loose in her mouth. On examination a piece, apparently of gum tissue, was seen hanging from the alveolar margin of the upper jaw, over the position of the unerupted left upper second molar. It was half an inch in length, and causing discomfort was removed. During the attempt to cut it away with scissors the patient started, and so it was not divided close; the remainder was seized and readily came away, leaving a slight impression. Examination revealed something hard at the end of the first piece, which proved to be a calcified nodule, acorn-shaped. Its stalk was composed

histologically of gum tissue and continuous with the calcified nodule; this surrounded the acorn mass, which was calcified. The nodule was covered with a delicate membrane, continuous with the capsule. Decalcified and sectionised, the nodule showed a radiate arrangement of dentinal tubules, and in parts a thin peripheral layer of cementum. No enamel was detected. The specimen was thought to be an odontome, connected developmentally with the tooth papilla and follicle. It was apparently liberated by the commencing eruption of the second molar. Subsequently the patient informed Mr. Mummery that another little mass resembling the first had fallen into her mouth, but as she was unable to come to see him she replaced it. On examination, however, it was not to be seen and had probably been swallowed. It would seem, therefore, that the growths were quite similar, and had been situated one on either side of the erupting molar.

Mr. MAGGS related a case of calcification of the pulp. The patient was a middle-aged man, and the only marked symptom was very severe neuralgia.

Mr. ACKERY thought the specimen looked more like one of invagination of the dentinal tissue, a view in which Mr. F. J. Bennett coincided. It was suggested that to determine this point, sections of the tooth (which Mr. Maggs presented to the Society) should be made and the President named Messrs. Maggs, Ackery and Bennett to examine the specimen and duly report at the next meeting.

Mr. H. LLOYD WILLIAMS read the notes of a case of salivary calculus. The patient, a man aged twenty-eight, came complaining of a small swelling below the left angle of the jaw. Mastication or sapid odours caused the tumour to increase considerably in size and become painful. Examination showed the left sublingual gland to be more prominent than the right. Bi-manual examination evinced a hardness in the floor of the mouth, and by pressing up and forwards, a portion of the calculus was seen through the mucous membrane. The tumour was cut down upon and the calculus removed. It was suggested that the accretion in these growths was quite similar to dental calculus, a deposit at first being thrown down at the bend of the duct where it turns to end on the summit of its papilla, its subsequent increase being due to additions to its side and posterior extremity.

Mr. J. BLAND SUTTON read a paper upon the relation of rickets to some forms of odontomes. In rachitic children dentition is

delayed, and this, Mr. Sutton thought, was due to the thickened follicles which are composed of membrane, and in rachitis bone-producing membranes are especially prone to thickening. In all specimens of fibrous odontomes which Mr. Sutton had shown, rachitis had affected the animals, and in each case the tumours were multiple and symmetrical. Histologically the tumours were composed of young fibrous tissue interspersed with laminæ of ill-formed bone, with occasional giant cells. In those affecting the upper jaw the fangs of well-formed teeth were often present; not so in those growing from the lower. Instances were adduced showing the association of rickets with odontomes to be not casual. Examination of specimens in the College of Surgeons' Museum convinces Mr. Sutton that tumours which have been removed from human subjects, and which should come under the class fibrous or soft odontomes, are in man also associated with rickets. In conclusion it is urged that it is not surprising that tooth follicles enlarged and thickened by rickety changes should later become hard odontomes. The like changes are seen in long bones which, softened and thickened during the rachitic processes, grow hard and dense as the disease is cured.

Mr. C. S. TOMES remarked that it was hard to follow Mr. Sutton in one point. He stated that if the rickety process was cured, the fibrous odontome would become a hard odontome. However, the specimens then shown seemed to Mr. Tomes to indicate that as all the tissues, cementum, enamel, and dentine were normal, the development would be in the direction of a perfect tooth, whereas in the hard odontomes the true dental tissues were always more or less abnormal.

Mr. STORER BENNETT could not reconcile the facts that whereas rickets was a common disease among human beings, yet symmetrically arranged odontomes were by no means common.

In reply, Mr. SUTTON pointed out that soft odontomes were in man usually found connected with the lower jaw, and that such odontomes, even in the lower animals, were associated, probably through suppression due to pressure, with a mere denticle or mass of ill-formed tooth material, and not with well-formed teeth. In the few cases recorded of odontomes affecting the superior maxilla in man, they were associated with well-formed teeth. It was probable that in these cases the aberrant follicle had free room to grow, either into the antrum or elsewhere. In the largest odontome known, which he had exhibited before the Society, decalcifi-

cation and examination showed the same laminated arrangement of the matrix as shown in the specimens of rickety bears he had that evening shown.

Mr. R. H. WOODHOUSE then opened the discussion upon antiseptics applied to dental surgery. He emphasized the important bearing bacteriology had upon antiseptic dentistry, in that it explained the reason for much that was commonly done. He further insisted upon careful study of the environment of the teeth, agreeing with Prof. Miller that "before all antiseptic or alkaline lotions come the tooth brush, tooth pick and floss silk." The object of antiseptics is to remove from the mouth those conditions which favour life, growth, and proliferation of bacteria. The antiseptics were classed according to their bacteriocidal powers—perchloride of mercury, peroxide of hydrogen, iodoform, salicylic acid, eucalyptus oil, carbolic acid, oxide of zinc, permanganate of potash; listerine boric acid and boroglycerine were also useful antiseptics. The red iodide of mercury has double the bacteriocidal power of the perchloride. In his own practice the speaker preferred eucalyptus oil, carbolic acid and oxide of zinc. Oxide of zinc in combination with carbolic acid was, in properly selected cases, of peculiar value in conservative treatment of the dental pulp. In badly decayed teeth of children, with non-exposed pulp, and in adults with exposed pulp, this preparation had proved most useful. He regarded as dangerous, even with the use of antiseptics, the practice of leaving the impoverished bone over a nerve if decay were present, in order to avoid exposure. The power of the antiseptic passes and there is a probability of renewed trouble arising.

When the dentine is affected by decay, antiseptics without complete removal of the decay are useless. In favourable cases, if exposure is slight, he touches the spot with warmed carbolic acid. After cessation of bleeding and pain, a thin paste of oxide of zinc and carbolic acid is conveyed on cotton wool to the point. Over this is placed a layer of vegetable parchment or blotting paper covered with a thicker film of the paste. The operation is completed with an oxychloride filling, care being had to avoid undue pressure upon the nerve. When a nerve is destroyed and removed, the fang extremity is filled with oxide of zinc, and carbolic acid applied either on fibres of cotton wool or pumped in. Mercurial preparations are, Mr. Woodhouse thinks, most serviceable in treating the root canals of dead and neglected teeth, and are

less liable to excite abscess than other antiseptics, but they are not deodorants. To deodorize he recommends eucalyptus oil.

The PRESIDENT said he proposed to give his experience of the perchloride of mercury, which he regarded as the most valuable antiseptic. One thorough application destroyed micro-organisms, sterilised organic matter, and stopped both putrefaction and fermentation. The objections urged against this agent in general surgery were not cogent in the case of dentistry. In treating putrid pulps and canals he employed two grains to the ounce of absolute alcohol. The canals and pulp cavity having been cleared of their contents and constantly swabbed out with the perchloride solution during the process, and at intervals the hot air syringe used, the solution was then pumped into the roots. For root fillings Mr. Sewill uses absorbent cotton wool saturated with the perchloride solution, with as much iodol as it will take up. The shreds are tightly packed, the alcohol evaporated by the use of the hot air syringe, while the pulp cavity and canals are sealed with "Fossiline" on fibres of absorbent wool. Mr. Sewill deprecates the use of metallic filling for roots.

Mr. F. J. BENNETT felt that the experience of different dentists differed so widely about pulp capping, that it was difficult to decide what was the best practice in treating exposed pulps. He thought the perchloride of mercury was the best germicide, but found the alcoholic solution evaporated too quickly for convenience, and so he used eight grains of perchloride to ziii . rectified spirit, and added zvi . of distilled water, and found it efficacious. The use of perchloride for sterilising instruments was most important. Eucalyptus oil, iodoform and iodol were useful germicides, the last two owing their power to the iodine which was liberated when in contact with animal matters. Although iodoform had a bad taste, it contained more iodine than iodol, while the latter parted more easily with its iodine.

Mr. MITCHELL forced hot air through cotton wool dusted with iodoform, and so forced it far into the canals.

Mr. ENGLAND, employing five grains perchloride to zi . alcohol, found the salt deposited upon glass, and believed a similar deposit occurred in the dental tissues. Iodol in his hands gave satisfactory results.

Mr. HERN emphasised the necessity of drilling and reaming root canals, believing that if the diseased tissues were so cut away fewer antiseptic drugs would be required. He took excep-

tion to eucalyptus as to all essential oils, since experiments had shown that they failed to get into contact with micro-organisms, being insoluble and non-miscible in water. Iodol he had found gave up its iodine too quickly, and further, stained teeth. The perchloride of mercury had proved most useful in hospital and private work. It was a valuable lubricant for iodoform. He employed an alcoholic solution, which being hygroscopic, desiccated the tissues and so placed the micro-organisms in a condition incompatible with life and proliferation.

A letter was read from Mr. Charters-White, stating his experience of antiseptics.

Mr. BETTS had in appropriate cases filled with cotton wool, powdered with iodoform, and sealed; he suggested the use of plaster of Paris might be tried as a means of dehydration, and so preventing the proliferation of those microparasites which required moisture.

Mr. BROWNE-MASON had found iodoform a satisfactory antiseptic.

Mr. C. S. TOMES had found iodol parted readily with iodine, but he believed such was not the case with iodoform.

Mr. ASHLEY BARRETT thought that if the septic bacteria were able to enter the dentinal tubules, it was impossible for drugs to cope with them.

The PRESIDENT referred to Mr. Arthur Underwood's researches on this point, and said he believed many cases when the trouble started again, after a long interval, were due to invasion of the dentinal tubes.

Mr. BOYD WALLIS stated that although he had introduced iodoform and iodol, yet further experience had shown him they were valueless alone. He commended the essential oils as anodynes and deodorants. Sulphur in thick solution in ozonic ether formed, he thought, the best capping for healthy exposed nerves. The various naphthols, specimens of which he showed, were valuable antiseptics and induced rapid healing.

Mr. GEORGE CUNNINGHAM thought a highly important point was to mention how much of the dentinal tissue was cut away before the antiseptic was used. With the dental engine healthy tissue could be reached and so little antiseptic would be required. Oxychloride of zinc had been satisfactory in his hands.

Mr. WALTER COFFIN felt it was difficult to decide which was the best antiseptic; peroxide of hydrogen and perchloride of mercury were most serviceable.

Mr. WOODHOUSE having replied, the PRESIDENT thanked those who had made communications and announced the next meeting for April 1st, when Mr. Jonathan Hutchinson, F.R.S., would contribute a paper upon "Surgical Diagnosis by the Teeth," and Mr. C. S. Tomes a casual communication on "Epithelioma of Upper Jaw."

Students' Society of the National Dental Hospital.

A MEETING of the above Society was held on the 1st of March, SIDNEY SPOKES, M.R.C.S., L.D.S.I., President, occupying the chair.

Among the casual communications were some cases of failure of fillings, owing to imperfect condensation at the cervical edge, and a curious case of profuse hæmorrhage from a pulp chamber, which, after a fortnight under an oxychloride stopping, had recommenced on the removal of the stopping. The paper of the evening was read by Mr. Haycroft, and discussed the question of syphilis in its relations to dental surgery, and in the subsequent discussion Messrs. Humby, Maughan, T. G. Read, Greetham, Field, and Clark took part. It was announced that a special meeting of the Society will be held on the 5th of April, when Mr. R. Denison. Pedley will read a paper.

Dinner of the Dental Hospital of London Athletic Club.

THE annual dinner of the above club was held at the Holborn Restaurant on Saturday, March 2nd, Sir EDWIN SAUNDERS, the president of the club, occupying the chair. The company present numbered 147, and included Sir William MacCormac, Drs. Julius Pollock, Buxton, Hewitt, Gangee, J. Walker, Bristowe, Crosby, Brodie Sewell, Mott, Stevenson, Mitchell Bruce, Willcocks, Stock, Messrs. S. J. Hutchinson, Fothergill, T. E. King, Hall, Forsyth, Rilot, J. F. Colyer, A. R. Colyer, L. Read, Ashley Gibbings, J. and H. Trewby, F. J. Bennett, R. Pollock, Trimmer, Carter, Christopher Heath, Woodruff, J. F. Pink, Ash, Morton Smale, Morgan, J. Colyer, Canton, C. Braine, E. Lloyd-Williams, J. Bland Sutton, H. Lloyd Williams, Gregson, Boyd, Storer Bennett, Sewill, Hepburn, Sutton, Barley, Ackery, Hern and Bailey.

At the termination of the dinner the CHAIRMAN, having given the usual loyal toasts, rose to give that of the "Dental Hospital of London Athletic Club," and in doing so he pointed out the great pleasure it gave him in being able to preside over them on that occasion. He referred to the rapid progress made by the club during the short period of its existence; he also referred to a very interesting event which occurred to him during his younger days, with regard to an invention for enabling a sculler to row in the same direction he was going. With the toast he was also pleased to couple the names of the Hon. Secretaries of the club, viz., Messrs. J. F. and A. R. Colyer.

Mr. J. F. COLYER, in replying, remarked that it was with great pleasure he rose to respond for the club. He briefly referred to all their successes gained in cricket, tennis and football, and to the musical society which had been only recently formed. The success of the club was due, he said, to the great energy displayed by the students, no less than seventy-five of the men being members, and also to the great interest taken in the students by all the members of the staff. Looking to the future he thought they could confidently look forward to a still better result next year, remarking that the club was now in good working order, and only required the future students to take up the work with the same amount of interest as the present had done.

The toast of "The Dental Hospital of London and School of Dental Surgery," was given by Dr. BRISTOWE, and in doing so he referred to the great progress made by the dental profession during the last few years. He wished the hospital every success, and said that it was with great pleasure he proposed the toast.

Messrs. SIBLY and MORTON SMALE replied on behalf of the Hospital and School respectively, the latter remarking that they did not lose interest in their students directly they left the school. They, the staff, were also pleased to hear of any success scored, any fresh honours gained; they were also equally aggrieved when they heard anything the other way; this, he was pleased to say, seldom happened.

The other toasts were given and responded to by Messrs. Storer Bennett, Bland Sutton, Hepburn, Dr. Pollock, &c., and that of "The Chairman," by Sir William MacCormac.

During the evening an excellent musical programme was got through, prominent among the items being that of a selection from "Pinafore," splendidly rendered by the members of the

Musical Society. Mr. Harraden contributed a musical sketch, entitled "Words for Songs." Mr. Knowles gave the "Cricketer's Song." Mr. Rae also sang, to the great delight of those present, "The Latest." This was encored, and later on in the evening he gave two others. Mr. Wheatly gave "I'll Sing thee Songs of Araby," and Mr. Barrett "The Longshoreman."

Taking all things together, the dinner was in every respect a brilliant success.

The Musical Society is greatly indebted to Mr. S. Bright for his valuable aid which has resulted in bringing it to its present state of efficiency.

Edinburgh Dental Students' Society.

THE above Society held its last general meeting of the session on Monday evening, March 4th, DAVID MONROE, L.D.S., President, in the chair.

Various bye-laws were modified. The following office bearers were then appointed for the ensuing session:—Hon. President, Mr. James Macintosh; President, Mr. J. G. Munro, L.D.S.; Vice-Presidents, Messrs. J. Turner, L.D.S., and A. E. Donogan, B.A.; Hon. Secretary, Mr. T. Gregory; Hon. Treasurer, Mr. A. K. Finlayson; Council (second-year students), Messrs. Sheppard, Anderson and Jameson.

The PRESIDENT then called upon Mr. J. S. AMOORE, L.D.S. Eng., to deliver his paper on "Fractures of the Maxillæ," which was most interesting and instructive, a great number of bandages and ingenious splints being applied to the jaws of a patient. It may be interesting to note that the patient, who apparently suffered from simple, compound, comminuted and various other fractures, recovered under Mr. Amore's able treatment in a remarkably short space of time, and that before retiring to his virtuous couch was able to masticate with considerable freeness.

A short discussion followed, after which the President gave his valedictory address, in which he congratulated the Society on the increasing hold it was taking upon the students, and said that this had been by far the most successful session in its history; he hoped that each year might represent an equal advance. As showing the brotherly feeling which exists between kindred associations, he mentioned that the London Students' Society had regularly for-

warded their *Transactions*, and that communications have passed with those of the National Dental, Birmingham, Manchester and Glasgow.

The annual dinner was fixed to take place on March 20th.

MINOR NOTICES AND CRITICAL ABSTRACTS.

Unusual Effect of a Full Subcutaneous Dose of Cocaine.

Under the care of MR. J. HENRY ASHWORTH, Halstead Cottage
Hospital.

THE interest in the following case is the record of symptoms which followed the subcutaneous injection into the lip of a quantity of cocaine. Since the introduction of this alkaloid as an anæsthetic by Köller of Vienna in 1884, many pages have been written on its use in the treatment of diseases of very different characters. Its employment has almost entirely altered the conditions under which ophthalmic operations are conducted; minor surgical operations are frequently carried out with no requirement for more than its local employment; and it has been much employed in the surgical treatment of diseases of the mouth, throat, nose, and other mucous orifices; it has even been used in amputation of the breast and more important operations, where for some reason or other it was considered inadvisable to employ ether or chloroform; it is also used in medical and gynæcological practice. The occurrence of a train of serious symptoms, which has been noted in a number of cases, has, however, prevented its indiscriminate employment, and although, until the case of accidental poisoning at University College Hospital last week (when the victim swallowed a solution equal to twenty-two grains) no fatal case has been met with in this country, there are many instances on record where the patients only recovered from a condition of the gravest kind after vigorous treatment, whilst two deaths are ascribed to its use in Russia.* It is difficult, in reading cases recorded as "cocaine poisoning," to avoid the conclusion that the symptoms of some of them are simply due to the effect of the operation, though a slight and painless one; they are those of

* The record of these is incomplete. See Wood's Therapeutics, p. 251.

a syncopal attack resembling that not unfrequently met with during the simple vaccination of an adult. In others the only conclusion is that in certain individuals there exists an excessive susceptibility to cocaine as an idiosyncrasy, but there is, unfortunately, no means of discriminating those who are susceptible from those who are not. It was suggested at one time that aged and feeble women were especially prone to its toxic effects ; but more extended observation has proved that hardly any age is free from this susceptibility, and that neither sex nor state of health makes any difference. In 1885 Nettleship drew attention to a series of cases in which panophthalmitis had followed its employment as a local anæsthetic in cataract operations. This was ascribed to an impure solution, and combination with antiseptics has rendered it innocuous. The manifestation of its toxic effect after hypodermic injection does not depend upon the use of large doses. Four minims of a 20 per cent. solution produced great rigidity, convulsions, and collapse. Mattison, who collected thirty cases, mentions one in which four minims of a 4 per cent. solution produced toxic symptoms in an adult. Mowat found symptoms follow the injection of three minims and a half of a 20 per cent. solution into the cheek. We cannot enumerate all the cases ; some are, however, worth perusal. When applied to the cornea, two minims of a 2 per cent. solution have produced nausea and vomiting lasting for many hours, with great prostration and paralysis of the tongue and limbs. Zeim of Dantzig relates a somewhat similar case, the symptoms, however, varying ; he also recorded seventeen cases, in which weak solutions produced symptoms (two to four minims of a 4 per cent. solution in eight cases, of a 2.5 per cent. solution in four, and of a 2 per cent. solution in five). In fact, weak solutions, whether applied to the cornea, mucous membrane, injected into the skin, or swallowed, may produce symptoms in some cases resembling those of collapse, in some amounting to violent delirium. Under these circumstances it is as well for those about to employ the drug to be ready with the means of combating them. The subcutaneous injection of ether, as in this case, has proved useful ; also, the inhalation of ammonia ; but the inhalation of nitrite of amyl (as recommended by Schilling) has been most useful. M. Martin employed caffein with some success. For the notes of the following case we are indebted to Mr. H. Stedman.

The patient, a middle-aged man, and fairly well nourished, but whose heart was weak and irregular, no actual murmur being

detected, was admitted for recurrent cancer of the upper lip. Owing to the condition of the heart it was decided to use cocaine locally, of which ten minims of a 5 per cent. solution was injected on either side of the part to be excised, making one grain in all. The patient very soon became somewhat excited, and complained of "feeling queer," the respirations at the same time becoming rapid and shallow, and the pulse quick and feeble. This condition gradually became worse, until about twenty minutes after the administration of the drug the pulse-rate was 160 beats per minute, and was scarcely perceptible at the wrist, although the carotids were felt to be pulsating strongly. The respirations were very rapid, shallow, and irregular, with an occasional deep one, more resembling a sigh. The patient appeared to be panting for breath, but unable to satisfy himself, until suddenly he would manage to take a deep inspiration, and would then seem relieved, but only for the moment, when the same condition would rapidly return. He was totally unable to control his breathing momentarily in order to take an inhalation of sal volatile. The pupils were normal, and reacted well to light. There was no extreme pallor, as mentioned in the books, indicating a contraction of the capillaries; on the contrary, there was marked cyanosis, especially noticeable on the lips and forehead. The feet became cold, and the skin covered with a clammy perspiration. As soon as the pulse showed signs of marked enfeeblement he was given a draught of sal volatile, but with little effect; he was then given a hypodermic injection of twenty minims of ether, which revived him considerably and greatly improved the vigour of the pulse, but only for a short time. These hypodermic injections were repeated three or four times at intervals of six or eight minutes, when the effects of the cocaine began to pass off. In about an hour and a half he seemed quite himself again, the respirations becoming quiet and easy and the pulse full and strong, but still remaining at 112 beats per minute. He was then given six ounces of mist. vini. gallici, and the operation was proceeded with, from which he has made a complete recovery.—*The Lancet*.

Fatal Case of Cocaine Poisoning.

AN inquest was held at University College Hospital on Jan. 31st, by Dr. Danford Thomas, coroner for Central Middlesex, touching the death of Charles Sidney Fletcher, who at the time of

his decease was an inmate of the hospital. Fletcher was admitted under the care of Mr. Berkeley Hill, for disease of the urinary organs. From the evidence of Mr. John Cresswell, house surgeon, we learn that it was intended to wash out the bladder with a detergent astringent solution, and to deaden the sensibility of the pain a solution of cocaine was to be first injected. The two prescriptions, the one for the cocaine and the other for sulpho-carbolate of zinc, were written on the same paper. The former simply directed that twenty grains of cocaine were to be dissolved in one ounce of water, and to it was appended the word "*statim*," without an accompanying verb to make the term intelligible. It was this defect which primarily led to the mistake which cost the deceased his life. The house surgeon wished to convey by the word "*statim*" that the solution was to be *dispensed* immediately. The dispenser, misled no doubt by the meagreness of the directions, misinterpreted it, and, believing the solution to be a *draught* for the patient to take, put it in a measure glass and gave it to the nurse, who waited for it. The latter administered it to the patient at once. It appears that upon writing the prescription the house surgeon put the paper on the table of the ward, and told the nurse to obtain from the dispensary the drugs ordered. When the nurse returned to the ward the house surgeon was engaged at an operation in another part of the building, or probably it would have chanced that he would have been consulted as to the correctness of the dispenser's reading of his prescription. Curiously, although the sulpho-carbolate of zinc solution was directed to be made into an *injection*, no intimation of the intended use of the cocaine solution was given. The fatal error was not recognised until the effects of the working of the cocaine became manifest. What the initial symptoms were is not known, for it was not until nearly an hour had elapsed that the nurse, hearing the patient making some unusual noise, had her attention drawn to him. It is said that there was some arching of the back resembling the opisthotonus of tetanus, and that there was a convulsive movement of the limbs. Consciousness was to some extent retained almost up to the fatal issue, since the patient, although apparently insensible, could be roused sufficiently to say, "I sha'n't," in answer to an injunction to do something. Death took place in about an hour after swallowing the cocaine solution.

The post-mortem examination was made about twenty-six hours after death. There was nothing unusual to remark in the external

appearances. Dissection revealed that the deceased had been the subject of old and recent tuberculosis of both lungs. There were numerous acute tubercular ulcers over the base and posterior wall of the bladder. The left kidney had been entirely destroyed, and its place was occupied by the remains of the shrunken capsule, in which were three small calcareo-caseous nodules. The left ureter was atrophied, its lumen apparently diminished except for about the lower inch and a half, where it was dilated into a sac large enough to receive the end of the forefinger. The left ureteral orifice, as seen on the surface of the bladder, was enlarged, but the communication between the ureteral canal and the bladder could not be made out. The right kidney was hypertrophied—physiological. In it was a mass of breaking-down tubercle. There were dilatation of the calyces and well marked pyelitis. The ureter contained about a dozen recent tubercular ulcers about the size of No. 5 shot. Its lumen was widened, and contained a small triangular-shaped calculus—not impacted. The bladder was about half full of urine, not mixed with blood. The liver showed well-marked cirrhosis—not cardiac. The spleen was enlarged as a result of the portal obstruction. There was no ascites. The lungs were congested. None of the cavities of the heart were contracted, nor were they markedly dilated. They all contained blood-clot. The valves were healthy. The brain was congested, and there was some serous effusion beneath the arachnoid, but there was no increase in the ventricular fluid. The stomach contained some thick pultaceous matter, mixed with mucus. Its mucous membrane showed hypostatic congestion at the cardiac end. The venous radicles were distended, evidently from the cirrhotic obstruction in the liver. The surface of the mucous membrane generally showed none of that minute injection of the vessels suggestive of the action of an irritant.

As this is the first fatal case of cocaine poisoning in this country, we have given the post-mortem appearances somewhat fully. It may be remarked that the urine contained about one-eighth part of albumen. This was accounted for by the muco-pus formed in the bladder, the ureter, and pelvis of the kidney. As the maximum officinal dose of cocaine is one grain, there can be no doubt that deceased took what would in most cases be a lethal quantity, although in one instance twenty-three grains and a half were swallowed without fatal results. The deceased was, unfortunately, so crippled in his renal function that a serious obstacle was pre-

sented to the elimination of the poison. As in other recorded fatal cases, death seems to have occurred partly from cardiac and partly from respiratory paralysis.

The verdict of the jury was to the effect that death was the result of misadventure. We can but endorse the rider to the verdict, that "in writing the prescriptions more distinct and clear indications should have been given for the guidance of the dispenser;" and regret that "the dispenser under the circumstances, seeing that the cocaine ordered was greatly in excess of an ordinary dose, should not have suggested to the nurse that it was not intended for a draught, and if in doubt should have referred the prescription back to the writer." That there was no gross or criminal negligence was clear from the evidence, seeing that each one of the persons involved in the mishap was striving to minister to the patient and alleviate his sufferings.

We cannot too strongly recommend that where abbreviations in prescriptions are employed, there should be a clear understanding as to their meaning between the prescriber and dispenser, and, further, that whenever a dangerous quantity of a drug is prescribed the word "poison" should be added.—*The Lancet*.

An Artificial Cheek, Eye, and Palate.

MR. HENRY MORRIS published in the Journal of April 21st, 1888, page 850, a case in which he removed a large recurrent myeloid sarcoma of the face. After the operation a large chasm remained, the roof of which was formed by the roof of the orbit, its inner wall by the septum of the nose, its outer wall by the outer wall of the orbit, pterygoid processes, and ascending ramus of the lower jaw; the floor was formed by the tongue and a portion of the soft palate, which was left intact. Posteriorly it communicated with the pharynx by a wide opening, in which, behind the posterior edge of the nasal septum, the trumpet-shaped orifice of the Eustachian tube of the sound side was fully exposed to view.

The aspect of the patient after the operation is shown in Fig. 1, and it must be admitted that his appearance was very forbidding. The absence of a great part of the soft palate rendered his speech almost unintelligible, and, though happily relieved by Mr. Morris's bold operation of the terrible disease from which he had suffered, the condition in which he was left was deplorable so

far as social relations were concerned. His case at this stage was undertaken by Mr. Charles A. Hayman, L.D.S., of Bristol (Dental Surgeon to Muller's Orphanage, Bristol, the Clevedon Hospital, &c.), who has fitted him with an artificial cheek, eye, and palate, by which he is enabled to speak intelligibly, and which have very much improved his appearance.



FIG 1.

Mr. Hayman encountered great difficulty in obtaining a model of the mouth, but this being at length overcome, an ordinary upper plate was made in the usual way; a fresh difficulty now arose, owing to the absence of one side of the palate, so that the obturator could not easily be held in place; to overcome this a slight flange of vulcanite was extended to fit outside the face, in front of the ramus of the lower jaw, and against the septum of the nose; then a large wedge of vulcanite was added, to fit into the posterior nares. This had the desired effect; the palate was secure, and speech and mastication considerably improved.

With the obturator in position, a model of the remaining hollow was taken, and from this a silver plate was struck, which fitted

accurately into the hollow and under the right ala of the nose; a small tongue of silver was adjusted over the bridge of the nose, and on to this the spectacles were subsequently soldered. An artificial cheek and eye were then modelled in wax to match the other side of the face. A second silver plate was then struck upon a metal cast taken from this model, and soldered to the inner plate as a cover is fixed to a box. An artificial eye was then fixed to the plate in the proper situation, and the face painted flesh-colour and japanned. In order to keep the mask in position a strong wire, fixed to the posterior edge of the artificial cheek, passes round the right ear, and the ear-pieces of the spectacles are joined behind the head by an elastic band.



FIG. 2.

Fig. 2 is a somewhat flattering portrait of the patient wearing the artificial cheek and spectacles. His appearance is undoubtedly considerably improved, and, apart from this, the obturator enables him to eat without difficulty and to speak distinctly.—*British Medical Journal*.

A Plea for Tube Teeth.

By C. H. WELLS, L.D.S., Huntingdon, Que.

DURING a brief practice in the old country some years ago, I was forcibly struck with the many advantages of the English tube over the pin tooth, and the conviction remains with me, that even critics here who have never used them, and who therefore are apt to despise them, would probably change their opinion, as I did, could they see the service they render, and bring them into comparison and competition with their rivals. It is true that for facility of application, the pin teeth are superior, but having said that, I know nothing more to be said in their favour. It is complained that the tube teeth, which are only held on by sulphur, draw from the pin; but what about the American teeth? The pivots or pins of the very best often draw from the teeth. You can easily replace a tube tooth which slips from a pin, or you can rivet it on the top and prevent it from slipping, but you cannot restore the tooth which has lost its pins.

One very great advantage of the tube teeth—the pin being immediately in the centre of the tooth—is that the strain is directly in the middle; the masticating force comes plump in the centre, and is better distributed. In the pin teeth, this strain is uneven, and it is common, even in gold plates, to find the attachment of the lining broken from the plate. How frequently, too, does it occur with vulcanite. The whole strain on our bicuspid and molars, is outwards; is not borne by the lower part of the lining, but by the small metal pins in the tooth. But the metal pivot of stiff gold into which the tube tooth is placed, bears strain better, because it is next to impossible to bring pressure on it at any angle, except the tooth itself first breaks, and not often even then.

Another advantage is that to the tongue tube teeth are nearest to nature, and feel best. With ours the tongue is constantly in contact with metal linings. Another advantage is that with the exception of the specks of solder holding the pins in the plate, there is no quantity of solder likely to cause contractions in the arch. I was told by old British dentists who used tube teeth thirty years ago, that when the journals were discussing the warping of gold plates in this country, they were rarely troubled, owing, they thought, to the absence of a great quantity of solder. A gold plate with tube teeth always fits well if once made well;

but the best gold plate with teeth which have been lined and soldered, may be warped any time it has to be repaired, and may be nearly ruined if a botch should repair it with common solder. No botch can spoil a gold plate with tube teeth, because he cannot adapt a new tooth to perfection.

I admit that for close bites, our teeth are better than tube teeth. They can be used too, better with vulcanite combinations. The cheapening of artificial work, not the improvement of it, has given the boom to the pin tooth, and yet among the latest improvements by several manufacturers, we find a modified form of the old tube teeth, with the holes through the sides, and intended for miserable vulcanite to run into, instead of for solid gold pins.

I am using almost exclusively the English tube tooth—with the interior platinum tube lining, when I can get them, in places where ordinary and even improved methods of pivoting is required. They are as dense and as solid as flint, and I have yet to meet the first failure on any such account as that friability characteristic of our teeth. I should like to see you cut one of these teeth in two with a pair of scissors, as you can cut clean our gum blocks ! You might as well try to take a bite out of a bit of steel.

The Tooth in the Apple.

THE Macon, Ga., *Telegraph* says : Chandler Jones, a negro, is in jail for a burglary on Mr. Milton's store in Hazelhurst. The circumstances of his detection are peculiar, and the work was done by Detective E. A. Wilson, who had found nothing in the way of a clue except an apple, out of which two bites had been taken. He at once noticed that the two front teeth of the biter were not only irregular, but peculiar. He imagined that when the biter was a boy an old tooth remaining in the gum caused a new tooth to grow one-sided. The apple was placed in water so as to prevent shrivelling, and, keeping his secret to himself, Wilson went down to Baxley, where he knew a number of loafing negroes.

Walking into a store, he bought some apples, and, biting one, said to a well-dressed negro who had attracted his attention, "Try one." The negro accepted the gift, and when he raised the apple to his mouth for a second bite the handcuffs were placed on his wrists. There never was a more astonished negro. He was under arrest so quickly that he was unable to offer any resistance. He gave his name as Chandler Jones, and was found to be wearing a

suit of clothes and a watch and chain taken from Mr. Milton. Jones was taken to the store, where he showed how he obtained entrance on the night of the burglary, and how the first thing he saw was a barrel of apples. He picked up one, and after two bites laid it down on Mr. Milton's desk.—*Dominion Dental Journal*.

REVIEWS AND NOTICES OF BOOKS.

A TEXT-BOOK OF OPERATIVE DENTISTRY, BY THOMAS FILLEBROWN, M.D., D.M.D., Professor of Operative Dentistry in the Dental School of Harvard University, &c., &c.; written by invitation of the National Association of Dental Faculties. Philadelphia: Blakiston & Co.

In his preface the author states that he was induced to prepare this work by the feeling that there existed need of such a text-book—"a feeling quickened by the invitation of the National Association of Dental Faculties to undertake the work." Literary and clerical assistance is acknowledged from Dr. D. W. Fellows, who has besides contributed the anatomical and physiological sections, and the author expresses his obligation to the following practitioners for help of various kinds: Professors S. H. Guilford, A.M., D.D.S.; E. T. Darby, M.D., D.D.S.; C. N. Pierce, D.D.S.; A. H. Fuller, M.D., D.D.S.; T. E. Weeks, D.D.S.; Edmund Noyes, D.D.S.; H. W. Morgan, M.D., D.D.S.; S. W. Dennis, M.D., D.D.S.; T. H. Chandler, D.M.D., and W. H. Atkinson, M.D.

An exhaustive work on operative dentistry, clearly written, fully illustrated and brought up to date, would, if thoroughly well done, no doubt be acceptable to dental students and many practitioners. The subject has in late years grown so large, operative procedures have become so complex, and instruments and appliances so numerous and elaborate, that writers of manuals of dental surgery have been obliged by limits of space to confine themselves mainly to explanation of general principles, and have rarely ventured upon full description of the details of operative procedures. It is of course impossible to thoroughly acquire a knowledge of operative surgery in any department from books alone, and the tyro who should venture upon dental practice under such conditions would as certainly produce disaster as though he attempted to remove a cataract or cut for stone. Operations must

be both taught and learnt by demonstration upon the living and dead body, and practice must be commenced upon the dead body, or upon the equivalent in dentistry—extracted teeth. Everyone can, however, perceive how extremely useful thoroughly clear and well illustrated descriptions may be made, and seeing how many beautiful works of this kind in general surgery have in late years been issued, we have often wondered why a capable author had not undertaken to provide such a one for our speciality. The auspices under which Dr. Fillebrown's book appears are, as we have seen, most favourable. We opened the volume with the liveliest anticipations of satisfaction; we have read conscientiously every page from cover to cover, and we are constrained to say that it is as a whole an egregious and lamentable failure. It is indeed scarcely credible that such a production could emanate from a Harvard Professor. It not only lacks the essential qualities which a text-book requires, but its teaching is in many important places so vague, obscure, or altogether erroneous, that if acted upon it would infallibly lead the pupil into difficulty and perhaps disgrace.

It must be counted fortunate for the profession in America that its special literature probably finds, with rare exceptions, no readers outside its ranks. If a work like that before us were like contributions to other departments of science, brought to the notice of the learned world, the result would be in the highest degree injurious to the scientific reputation of the profession. If, it would be argued, a dental professor at Harvard University can deliberately put forth a work like this, showing himself apparently unconscious of its glaring inexcusable defects, what must be the condition of culture of the rank and file of a profession of which the author is doubtless one of the leading lights? Luckily for his brethren Dr. Fillebrown's book will not find any but dental readers. If he would submit it to the judgment of some of his colleagues at Harvard—get, for instance, the late Professor of Anatomy, that master of English style, Oliver Wendell Holmes, to express his candid opinion of the book from a literary point of view—we venture to affirm he would not only acknowledge the justness of our strictures, but would endeavour in some way to make amends for the injury, small though it may be, which he has caused to the repute of the renowned University in which it is his high privilege to hold office.

What are the qualities indispensably requisite in a text-book?

They are clearness, accuracy and conciseness. It is impossible for a book to be clear when, as in Dr. Fillebrown's work, the commonest rules of grammar are systematically violated. It is impossible to be accurate when old terms are loosely and improperly used, and when, without explanation, new, unrecognised terms of doubtful or equivocal meaning are introduced. It is impossible to be concise if topics not strictly germane to the subject of the work are introduced at disproportionate length. Upwards of twenty pages at the opening of the book are occupied with anatomy. These pages, quite unnecessary in such a work, are not particularly well done, and they contain some statements incorrect and some unintelligible. Here is a sample: "The structural elements of dentine are the matrix, richly impregnated with calcareous salts, the dentinal tubes, and the soft fibrils."

This is, of course, quite wrong; the constituents named are not tissue elements. If plenty of the same kind of writing were not to be found in these pages, we might take the following for a curious mistake. As it is, we are driven to ask how the dental periosteum can vary *histologically* in different parts? "The direction of the fibres [of the dental periosteum] is obliquely across from the alveolar wall to the cementum, and, although the membrane varies histologically in different parts of its thickness, it is probably but a single membrane."

The next section is on dental caries. In a work devoted to operative surgery, etiology, pathology and diagnosis are not needed, and are not usually given except in necessary casual reference. These subjects are better dealt with in systematic treatises. We want here to know about operations—conditions of injury and disease being given, what are the recognised methods of treatment and how are they best carried out. The account of caries fills three pages, and its value may be gauged from the following sample, a bit of meaningless verbiage of which it is not possible to make sense. "Local causes have reference to organisation, calcification and environment of the teeth, these depending largely upon the food, occupation and habits of life of the individual."

Pages 30 to 46 are devoted to instruments, such as burs, pluggers, and rubber-dam clamps. They contain very few lines of description; fifty engravings from White's well-known catalogue take up most of the space. At last, on p. 54, section "Cleansing Teeth," we are introduced to Operative Dentistry. This is how

the author initiates the beginner into the mysteries of the simple operation, "Scaling." We do not envy a patient upon whom the operation should be attempted by a beginner, instructed by this very droll and extremely puzzling description :—"To remove calculus from the roots of teeth, pass a thin, hoe-shaped instrument under the gum beyond it, and drawing toward the crown of the tooth bring the deposit with it, or, using instruments constructed for the pushing force, hold the instrument firmly against the root and press toward the apex until the deposit is loosened."

A practitioner who should act upon the following would probably get into trouble :—"To remove the green and other stains from the teeth, apply tincture of iodine *freely*, and then polish as before." It must be recollected that these descriptions are meant for primary instruction, not for really qualified practitioners, who are well aware that *free* use of iodine cannot be literally meant.

"Opening Cavities," "Removal of Decayed Dentine," and "Formation of Cavities for Filling," are discussed in less than three pages, the last-named subject being dismissed in less than forty lines. When we consider the great variety of cavities, their different positions, shapes and peculiarities, and the amount of art needed in fitting them for the reception of the different classes of fillings—a full account of all which would fill a very long chapter—and when we recollect that this is one of the most important topics of operative dentistry, and that the author has given up many more pages to subjects such as anatomy, which are not necessary, we can judge what utter want of proportion the scheme of this work presents. Filling materials, from gold to cements, and the methods of stopping with each material, as well as descriptions of the mallet and matrix, are all handled in twenty-two pages, which are encroached upon largely by engravings from instrument catalogues. This is, of course, ludicrously inadequate space for clear or full treatment of these matters, and we recollect no brief hand-book professing to deal with operative dentistry in which they are not given more space. The treatment of exposed pulp and of the inflammatory sequels of caries, dental periostitis, &c., fills in all about fourteen pages, of which under six are made to suffice for the pulp. This includes many interpolated incorrect fragments of pathology. The directions are obscure and ill expressed. Of all this our readers may judge from the following citations :—

"*Exposed Pulp.—Symptoms.*—The pulp is sensitive to touch. It appears as a small grayish-white spot in the dentine, and may

be detected by sight, or by the very delicate touch of a fine-pointed instrument.

"*Treatment.*—Cap the pulp with a solution of gutta-percha in chloroform, adding oxyphosphate or oxychloride of zinc for protection, the latter mixed thin and applied without pressure, or bathe the exposed pulp for some minutes with creasote, and then cap with oxyphosphate of zinc."

As to the symptoms named—which, by the way, are signs not symptoms—we would like to be informed whether a living pulp is ever other than sensitive to touch. As to treatment, we wonder why no explanation is given of the antiseptic measures which are now universally adopted in treating exposed pulp, and we venture to affirm, without fear of contradiction, that to cover a pulp as directed with solution of gutta-percha in chloroform, without bringing the pulp into an aseptic state, would be to induce in ninety-five per cent. of cases immediate acute inflammation.

Here is the author's extraordinary list of—"Diseases of the Pulp.—Irritation. Fungus. Fatty degeneration. Atrophy. Putrescence. Congestion, inflammation. Suppuration. Calcification. Mummification."

No explanation is forthcoming of the nature of the hitherto undescribed conditions, fungus, fatty degeneration, and mummification. By fungus we may guess is meant "polypus," an old name for a well-known pathological product in pulp disease. It is to be hoped the suggested treatment may not be acted upon. A drop of strong nitric acid is rather an heroic remedy for "fungus growth," unless that undescribed malady be of a character calling for a desperate remedy.

"If the pulp develops a fungus growth, the application of a little strong nitric acid will destroy it with but little pain. Dry the pulp, and with a wood toothpick apply a drop of the acid." We might suggest in passing that "fungus" is not an adjective, neither is "wood." The term fatty degeneration provokes a smile as applied to the pulp. No such condition has ever been described by pathologists. Wedl, it is true, mentions the presence of fat globules in gangrenous pulps, but this can no more be called fatty degeneration than the conversion of a piece of decomposing muscle into adipocere can be so styled. How "putrescence" can be called a disease, we do not attempt to divine. The pages of this book are so studded with *mal à propos* remarks, blunders, and travesties of scientific diction that it is difficult to make a

selection, and we have already, we fear, occupied too much space. This next extract will, however, further exemplify the character of the sections now under review.

"The symptoms of acute abscess are extreme soreness of the tooth, chill, fever, throbbing pain, and in the later stages swelling and fluctuation. The pain of acute abscess is very severe until the pus has penetrated the bone."

Soreness of the tooth! what a very definite statement! And then chill! Does it mean rigors? As fever follows, perhaps this is really meant. This is putting the cart before the horse; pain and swelling come first, and rigors and fever, if they come at all, come towards the end of alveolar abscess rather than the beginning. Rigors are, however, extremely rare, and when they do occur they usually mark the imminence of suppuration. Fever, to the extent of showing more than fractional rise of temperature, is very rare indeed. Then fluctuation is not a symptom; it is the sign which, on palpation, makes evident to the surgeon's fingers the presence of pus within an abscess. And, lastly, the words "penetrated the bone" would certainly mislead the student grossly. They must, we presume, be interpreted "perforated the alveolus," a very different matter indeed.

The chapter on "Extracting Teeth" takes up twenty-six pages, but of these twelve are entirely occupied, and several others partly occupied, by cuts of instruments. The directions for operating are in clearness on a par with the matter we have already cited, and not the least attempt is made to describe the general principles upon which the operation of extraction is always conducted, and no proper account is given of the directions in which the force applied to each class of tooth needs varying. We must not quote much more, but cannot resist presenting the following gem. Among the "accidents" of extraction, "gangrene of the socket" is given; although the author really seems to know that the condition which he describes can hardly be an "accident" if it appears only after considerable lapse of time:

"Gangrene of the socket results from degeneration and putrefaction of the clot formed after extraction. Granulation does not take place, pain and tenderness continue, and the clot sloughs out leaving the bony walls of the socket exposed, putrescent and offensive.

"A low or depressed condition of the system tends to produce this result.

"For treatment, cleanse the parts carefully with warm water, adding the solution of chlorinated soda as a disinfectant, and then apply pure deliquesced carbolic acid. This is thought by some to be a specific. One application is usually sufficient. Sulphurous acid is used successively, and nitric acid carefully applied will promote a healthy action."

Most of this may be considered funny, particularly the burlesque pathology and the statement that carbolic acid "is thought to be a specific"—a specific for what! But should any misguided novice act upon the advice and apply nitric acid to the inflamed alveolus of an unfortunate patient, he will in the end probably find that it is by no means a joke. He will very likely find himself defendant in an action for malpraxis, and will be lucky if he escape being mulcted in heavy damages to compensate for the anguish and injury which his gross ignorance may have inflicted upon the patient.

What has any claim to new writing in this book ends at p. 148, with some four pages on anæsthesia. The rest of the work consists of acknowledged excerpts from dental periodicals describing various kinds of crown work.

The section on anæsthesia is entirely devoted to the physiological action of agents, and not a word is given as to operative procedures such as properly belong to the book. No mention is made of means and instruments for opening and keeping open the jaws, except the bare statement that in giving gas a "prop is to be put between the teeth."

This section contains, perhaps, a greater proportion of error and of pure nonsense than any other division of the book. The following are examples:—

"*Anæsthesia* is a state of insensibility, induced by any means or conditions whatever."

"*Alcoholism* is a condition unfavourable to the production of anæsthesia. *It* is generally difficult and often impossible to produce *it*, and *it* is attended with unpleasant symptoms. There is no danger in attempting *it*, but if unfavourable symptoms appear the attempt should be abandoned."

"When giving gas the face of the patient sometimes becomes quite livid. This is due in part to asphyxia and in part to nervous conditions bringing the venous blood to the surface, but more largely to impurities in the gas. The symptom has become much less frequent since the introduction of liquid gas. This is not to

be considered an alarming symptom, and absolute purity of the gas will prevent it."

Much might be forgiven the composer of a text-book if only by one way or another the aim to impart necessary information were achieved. Look at these passages—by no means the worst which might be selected from the section under notice. Could anything be more ludicrously incorrect as a generalisation than the definition of anæsthesia? Then, not to dwell upon such comparatively trifling details as that asphyxia is confounded with apnoea, could these statements possibly convey anything but error to the average student?

It is amazing that section after section, made up in great part of similar stuff—mainly nonsense in consequence of disregard of common grammar—should be put forth with the concurrence of the body of collaborators whose assistance the author acknowledges, and that not one of these should have apparently protested against the wholesale murder of the Queen's, or rather the President's English which is perpetrated throughout the pages of this precious text-book of operative dentistry.

ANNOTATIONS.

WE have just received the first number of a new quarterly, *The Dominion Dental Journal*. This periodical has absorbed the old Canada Journal of Dental Science, and will appear quarterly under the editorship of W. George Beers, L.D.S. (Montreal), assisted by C. S. Chittenden, L.D.S. (Hamilton), and A. C. Cogswell, L.D.S. (Halifax). We need hardly say how heartily we wish success to our new contemporary, and if we may judge of the ability with which it is to be conducted by the first number, we may safely say its success can scarcely be a matter of doubt. Making allowances for the extra difficulties of a first number the editing is careful; but, what is more important still, the tone of the journal throughout is dignified and professional, and the original matter bears a handsome proportion to the "scissors and paste" department. Out of forty-eight pages ten are devoted to original communications, nine to editorials, and ten to reports of societies. We would suggest to any of our readers who wish to

take in another journal that, if the succeeding issues are as good as the first one, *The Dominion Dental Journal* is thoroughly well worth a subscription, and once more we wish success to the venture.

A GOOD start is half the battle, and our contemporary has certainly gained all the advantages accruing to a good start. It is satisfactory to find the work of the British Dental Association understood and appreciated outside the mother country, and the following words occurring in an editorial note show that the editor of the *Dominion Dental Journal* is in full sympathy with us in our labours: "The Dentists Act and the system of registration are working much more effectually; the British Dental Association is proving not only a phenomenal success, but we venture to believe that it already leads all the other societies of the kind in America as well as Europe. The education of students is grounded upon a system that may not develop conceited and half-fledged 'Doctors of Dentistry,' but that is sure to reap rich reward in the future. We should not be surprised to see the day when earnest students in search of the solid and scientific, in the higher branches, should resort to England or Germany. The day of the advertising, ostentatious, so-called 'American Dentist,' who is generally a shrewd Briton in the disguise of a cheap degree obtained in the United States in a few months, is nearly over. No one more than respectable American dentists will rejoice when the last of these tramps is extinct." This is what we have always maintained; the advertising quack who dubs himself "American" is generally an unsuccessful Briton, who endeavours by means of effrontery and an adopted accent to pass himself off as an American, to the great detriment of the *bonâ fide* practitioner who hails from across the seas.

A NEW Dublin school and hospital devoted to dental surgery is to be built, and funds are urgently needed for the undertaking. It goes without saying that the scheme will be prosecuted with energy, and already we hear rumours of a fancy fair in aid of the

undertaking. We shall hope before long to place before our readers full particulars about this entertainment. All we can say at present is that any of our members who have works of art to spare cannot do better than communicate with our Dublin friends. The occasion seems to offer an opportunity to those of us who have obtained their diplomas in the sister isle to do something tangible for their *Alma Mater*. The Irish licentiates are a numerous contingent, and this is their opportunity. We are sure that the individuals will not be slow to respond ; it only needs a head to organise their willing co-operation.

THE third ordinary meeting of the Odonto-Chirurgical Society (Session 1889) was held in the Rooms, 30, Chambers Street, Edinburgh, on Thursday, 14th March, at 8 p.m., W. H. Williamson, M.D., President in the chair. After some interesting casual communications, a paper was read by W. Dall, L.D.S. (Glasgow), on "Porcelain Fillings," illustrated by specimens exhibiting the *modus operandi* from the commencement. The Annual Meeting and the Dinner of the Odonto-Chirurgical Society and L.D.S. has been postponed from March till April, when it is expected the new hospital premises will be completed ; and a dinner, subsequent to the meeting, will be held to inaugurate the event.

The most popular of modern writers on Natural History, the Rev. J. G. Wood, died on Saturday, the 3rd March, of peritonitis, while on a visit at Coventry. Mr. Wood's delightfully readable style has enabled him to disseminate a love for zoology in many quarters where such a taste would never have sprung up without some such aid. We cannot refrain from paying our tribute to the popular zoologist, but while doing so we feel constrained to mention the very sad fact that Mr. Wood has left his widow and children almost unprovided for. Surely those whose childhood and youth has been made brighter by his works will endeavour to repay the debt to the children of their benefactor. Any sum will, we are sure, be gratefully received by the Rev. A. Whitehead, Vicar of St. Peter's, Kent.

STATEMENT of operations performed at the National Dental Hospital, from February 1st to February 28th, 1889.

Number of patients attended 1866

Extractions :

Children under 14 286

Adults 438

Under Nitrous Oxide... .. 643

Gold Stoppings 94

Other Stoppings 562

Advice and Scaling 414

Irregularities of the Teeth... .. 57

Miscellaneous 147

Total 2626

E. C. FISK, }
R. S. FARO, } *House Surgeons.*

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our Correspondents.

An Apology.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—Permit me through your columns to tender an apology for the annoyance which I must unintentionally have caused by writing to urge the duty of registration upon several gentlemen who were already registered, several of whom had been registered since 1878. I wrote in consequence of information supplied by an official of the Association to the Representative Board. The information proved to be to a great extent incorrect, and the result has been a great deal of annoyance, for my share in which I beg to apologise. I may safely add that my regret is thoroughly shared by the gentleman who, in perfect good faith, supplied me with the information which proved to be inaccurate.

Yours,

MORTON SMALE.

40, Leicester Square, London, W.C.

Hon. Sec.

March 12th, 1889]

Dental Education.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—The editorial article in last month's Journal contains an invitation to discuss the subject of dental education. There seems to be a general impression that the L.D.S. examination of the College of Sur-

geons needs amplification and modification in the direction of increased stringency. In considering this question we should not forget, as I fear we are apt to do, that the Dental Act was passed in the interest and for the protection of the public. Now the interest of the public in the matter is, I take it, to be provided with *efficient* dental services at the lowest possible cost. Increased stringency of examination must mean increased cost of obtaining the license, and therefore increased cost of dental services. It behoves us, therefore, to show good reason for any changes we propose.

The writer of the article referred to, who is, I presume, also the author of the article of Dec. 15th, justly deprecates "the one-subject-at-a-time system. This is, however, quite a different thing from the division of the examination into two portions as advocated by Mr. Rees Price; this is highly desirable for reasons fully set forth in his letter. How can this be effected with the least possible change in existing arrangements? The proposal of the *British Medical Journal* is that the dental student be required to pass the first two examinations for the conjoint diploma. Against this I would most earnestly protest. Dentistry consists of a science and an art, of which the latter, if not the most important, may safely be said to be the most difficult to master by the average man. In the calendars of the prominent London schools, medical students are advised to confine their attention to the subjects comprised in these two examinations during their two first years. If the dental student is to pass these examinations, the preparation for which occupies the whole time of the medical student, it follows that he must neglect his purely dental studies, and, what is even more important, his practical work at the Dental Hospital.

If, however, the first examination in elementary anatomy and physiology and chemistry be deemed to meet the requirements of the case, it might perhaps be fairly demanded from the dental student, and this would be a very simple solution of the whole matter. The pass examination would then remain pretty much what it is, except that any questions in anatomy and physiology would be strictly confined to the regions coming within the range of dental practice.

I should like to add one word about "Dental Degrees"; as yet I have heard no strong *arguments* in their favour, and until these are forthcoming, should consider the institution of such degrees a retro-grade step tending to separation between the medical and dental professions.

Yours faithfully,

JOHN A. FOTHERGILL.

Darlington, March, 1889.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—In the February editorial I am accused of assailing, with hostility, the *writer* of the December editorial. To this I must plead an emphatic denial. I had no conception who wrote the article in question, and I certainly believe that the Association Journal is open to courteous expression of opinion by any member. What I tried to do was to emphasize the fact that the Publishing Committee (who are responsible for the editorials) had allowed therein the expression of an opinion which I felt sure would not be endorsed by many members of the Association.

The Journal of the Association should be *the* Journal of the profession, and when it speaks by its editorial, it should speak as one having authority. If to be authoritative is to be dull (as the writer of the editorial thinks), well, it must be so.

I am, Sir, your obedient servant,

REES PRICE.

Bye-Paths of Quackery.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—I was pleased to see the letter of the house surgeon to the Rochdale Infirmary in your last issue, under the above heading.

I can not only fully endorse everything he says, but can prove that the case he cites is not an isolated one, as the unprofessional practice of hiring touters (or agents) to go from house to house with circulars and samples of artificial dentures is adopted by many dentists in this district. I believe the usual method is to leave a circular wherever practicable, which will be called for in a few days, when the agent will show samples of artificial teeth, puff up the wonderful ability of his employer, and endeavour to convey the impression that he is cheaper than anyone else in the neighbourhood. The agent generally carries with him a bag containing forceps and impression trays, so that he is well equipped for securing "an order." I knew one man who, on one occasion, was in a fix, having left his impression trays at home. He got over the difficulty, however, by getting some bees-wax from the nearest chemist, and using an oyster shell as a tray.

These men are crowding thickly upon each other, and must have work at some price, and no stone is left unturned to secure their object. When an agent has followed this business for some time and has acquired sufficient cheek, combined with a little herculean dexterity (or otherwise), he improves matters by commencing business as an artificial tooth maker, or proprietor of a Dental Supply Company. If these men were alone in their unprofessional methods of practice, the system would soon die out, but unfortunately they are not, for I know qualified dentists who not only peregrinate the districts in which they reside, but execute mechanical work for unregistered and

unqualified practitioners. So long as qualified dentists will stoop to this sort of thing, so long shall we have the rag-tag and bob-tail hanging at our heels. The question naturally arises, "How can we improve matters?"

I think if all respectable dentists would meet together oftener, either as sections of the British Dental Association, or as local societies, questions like this could be dealt with from time to time, and if a *legal* remedy could not be devised, which would be speedily operative, the combined efforts of the members would effect a *moral* influence, the public would at least be educated to a proper conception of the professional aspect of the case, and popular opinion would soon be so strong that in a short time the system would collapse.

There are men, I fear, who instead of doing all they can to elevate the status of their profession, inquire in a querulous manner, "Why doesn't the British Dental Association put a stop to this sort of thing?" To which I reply, the British Dental Association cannot interfere without there is a direct infraction of the "Dentists Act," and undoubted proof can be brought to bear on any particular case. Again, these much-needed reforms cannot be accomplished without funds. The legal *broom* is an expensive article, and its *manipulators* require paying; the British Dental Association is not a wealthy organisation, and as legal processes cannot be set in motion and sustained on trust, I would advise and urge those men who are ever grumbling at the present condition of things, to join the Association, and assist its efforts by their influence and subscriptions. Some men are contemptible in their grumbling, they are selfishly content to enjoy the results of the operations of the Association, but they will not lift a finger to advance its interests, or give a copper towards paying the cost of the reforms it has effected.

I am, dear sir, yours truly,

I. RENSHAW.

Rochdale, March 6th, 1889.

The Second Annual Museum.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—I am anxious to inform the members of the Association generally that the Museum Committee solicit their kind assistance in collecting and preserving specimens of interest for exhibition at the Annual Meeting of 1889. The committee will undertake that the utmost possible care shall be taken of all specimens lent to them, and returned within one month after the meeting.

The committee have decided to *limit* the exhibition to a few subjects connected with dental science, in the hope that the collection may prove fairly exhaustive in the directions specified.

The following is a summary of a provisional scheme drawn out by the committee :

*Section I., Microscopy.**Section II., Anæsthesia* (including apparatus, ancient and modern).*Section III., Pathology.*—Specimens of Diseases of Cementum, Exostosis, &c., Rigg's Disease with brief notes. 'Models of Redundancy of Teeth, Deficiency of Teeth.*Section IV., Surgical and Mechanical.*—Models of Irregularities of the Teeth (with appliances for correcting), Deformities of the Mouth (illustrating specially cleft palate cases, with examples of obturators and artificial vela).*Section V., Operative.*—Crown, Crowning, and Bridge Work.*Section VI., Manufactures.*

In a future issue of your Journal, I hope to give further details.*

Believe me, yours faithfully,

WALTER HARRISON,

Hon. Sec., Museum Committee.

98, Western Road, Brighton,

March 11th, 1889.

Proposed Dental Section of the British Medical Association.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—A discussion has been started in the columns of the *British Medical Journal*, by certain dental members of the Medical Association, as to the desirableness and feasibility of instituting a Dental Section. Will you allow me briefly to state some objections to this scheme which, it seems to me, would be a mistake. I should oppose it, not because I love the British Medical Association less—I have no feeling but hearty good will towards that body—but because I love the British Dental Association more. There can be no doubt that the British Medical Association as a body is influenced by the very best feeling towards us; this has been shown from first to last, and has been constantly reflected in the editorial columns of their Journal. It is also perfectly certain that the dental members, who have brought forward the project, would do nothing which might in the remotest degree injure our Association, and I feel sure they will willingly withdraw when they realise that there exist serious objections to their proposal.

In the first place, if every eligible dental surgeon were to join the Medical Association, it is not likely that more than a percentage would attend meetings, and they would be too few in number to make a respectable gathering. Secondly, the two Associations meet in August, and as it is not likely, if it were even possible, that dental members would attend both meetings, our Association would be

* It is the desire of the committee that the exhibition should illustrate the subjects under discussion as far as it can be made to do so.

weakened by the absence of some individuals whom we would rather not spare. Thirdly, seeing how comparatively limited is the field of science really belonging to our speciality, and the consequent difficulty there already exists in finding authors of papers and subjects for discussion at our annual meetings, it is evident that with the Medical Association competing with us for contributions, we should be very much worse off in that matter than at present. Lastly, the British Medical Association, powerful and well wishing as it may be, can do nothing for us, either in science or politics, which we as a united profession cannot do better for ourselves. The bye laws of the Medical Association admit to membership only practitioners who are on the Medical Register, and, therefore, a dental section could include only a small minority of our profession.

Your obedient servant,

A MEMBER OF BOTH ASSOCIATIONS.

Replantation.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—I must enter a mild protest against gentlemen making assertions without a sufficient time has elapsed for proof. At the last meeting of the Odontological Society, I read that one or two gentlemen mentioned the fact of replanting molar teeth without devitalizing and filling the pulp cavity. I maintain the idea is perfectly preposterous; for instance, a relative had an experience of calling upon an unqualified practitioner, and getting the wrong tooth extracted, a perfectly sound molar, after which the decayed tooth was extracted. This practitioner quoted a deservedly high authority, and advised replantation, result was, being on the sea coast six months later, my niece complained of severe swelling, &c.; I therefore had to extract the dead tooth there and then on the sands. That gentleman is probably priding himself on his success, although the tooth was "green."

Yours faithfully,

HERBERT A. LAURENCE, L.D.S.I.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

Subscriptions to the Treasurer, 40, Leicester Square.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE—All communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

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A
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The Register for 1889.

THE appearance of each new Register is an important event to all dental practitioners, and especially to those who, by joining our Association, have proved that they take a living interest in the progress of the profession. The vital importance of possessing a correct Register and of keeping it correct year by year has been already dwelt upon again and again in these columns: it has been impressed upon those who have attended our Annual Meetings whenever a suitable opportunity presented itself, the secretaries of our branches have done their utmost to keep the matter well before their own members, and it cannot be invidious to mention the special exertions of the Hon. Secretary of the Midland Branch in urging this question, but, notwithstanding all this energy, the Register which has now been issued for 1889 is not without considerable blemishes. Owing to the ungrudging labours of the able Registrar

to the General Medical Council, Mr. W. J. C. Miller, assisted by prominent members of our Association, a great deal has already been done, but the apathy and indifference against which they have had to contend has prevented their labours from being absolutely crowned with success. It is a curious fact that some errors in addresses have been allowed to appear in quarters where they might have been least expected—a fact which may well be employed as an excuse in reply to remonstrances addressed to those who have omitted to notify changes of address to the Registrar, seeing that it may be urged that if the leaders are at fault, how can the rank and file be expected to be blameless in the matter.

In order to secure, so far as possible, the accuracy of the Register, an investigation by means of letters of inquiry has now for some time been going on, pursuant to the provisions of Section 12 of the Dentists Act. Each of these inquiry-letters is being sent to the *latest registered address*, and every person whose name appears on the Register will have such a letter addressed to him, save only such as may have previously forwarded to the Registrar a communication in regard to their address *since the issue* of the Register for 1889.

In all cases of undelivered letters returned through the Dead Letter Office, the name of persons addressed in such letters will be liable to be *removed from the Register*, as also will the names of those persons who may throw aside the inquiry form and refuse to take the small trouble of returning it. This is a most serious risk to run; to be removed from the Register would involve an amount of trouble in getting the name restored altogether disproportionate to the trouble that is saved by neglecting the inquiry. It is well to impress upon all our readers that the simplest and surest method of proceeding, and one which

would save immense expense of time and money to the authorities, would be for every reader of this Journal who has not yet received his inquiry-form to sit down at once, as soon as he has read this article, and dispatch a post-card dated and bearing his correct name and address, to the Registrar-General at the Medical Council Office, 299, Oxford Street, London, W. Let this be done whether the facts appear correctly in the Register for 1889 or not. If this advice is carried out, we believe the Register of 1890 will contain very few mistakes compared with any of its predecessors.

At the same time we would strongly urge all licentiates who may not yet have registered their diploma to do so at once, in order that they may be immediately removed from the steadily diminishing list of persons registered merely as "In practice before July 22, 1878." This is due both to the profession and to themselves; we trust, therefore, this important duty will be no longer neglected.

Under Clause 37 of the Dentists Act a large number of apprentices have been placed on the Register, notwithstanding that the General Medical Council require statutory declarations from both the apprentice and his master that the apprenticeship ended before the 1st of January, 1880. It has been frequently suggested to the authorities that perjury has been committed in some of these cases, and careful inquiries are being made in the hope of being able either to show that such is not the case, or to bring the offence home to the culprits, when they will most certainly be prosecuted for perjury and will be liable to imprisonment for a term not exceeding seven years.

One more word touching the duty of sending information of incorrect addresses or unlawful entries to the Hon. Secretary of the Association. All such information will be gladly received, but it is absolutely necessary in quoting an

unlawful entry to give sufficient proof of the illegality, to enable the authorities to proceed. It is also only fair to ask that those who supply information concerning incorrect or irregular entries should be sure of their facts. The Hon. Secretary has more than once been placed in very painful and embarrassing situations by acting upon information which has been vouched for as reliable.

In conclusion, let us repeat the advice to every one of our members, to lose no time, but promptly write to the Registrar as suggested above; in this matter the greatest good will result if every one accepts his own responsibility and acts for himself. Let it not be left to indefatigable secretaries of branches to rout out defaulters, and stir up the indifferent and the careless. The leaders have done, and are still doing, their utmost; it is for the rank and file to complete the work.

Cocaine.

FOR some months past our readers—at least, those of them who dip into the columns devoted to Minor Notices—may have observed that a considerable space has been devoted to articles and reports of cases touching upon the uses and abuses of cocaine. The matter is one of very considerable importance, as having a direct bearing upon our daily routine of practice. An anæsthetic of the character of cocaine has probably a more direct interest for practitioners of dental surgery than for any other disciples of Æsculapius, with the exception, perhaps, of ophthalmic surgeons, and it has therefore seemed wise to collate and present to our readers as much reliable matter throwing light upon what we may or may not expect from the drug as space would allow. For the same reason it may not be deemed amiss if we devote a page or two to summaris-

ing the amount of exact knowledge with regard to the action of the drug which has resulted from the careful investigation of the last few years.

Like many other powerful agents, cocaine was no sooner placed before the profession than it became the fashion; before its powers were fully understood it was employed very extensively, we might almost say recklessly. This was very natural and in fact unavoidable. Nothing is so likely to be abused at first as a powerful local anæsthetic. Everyone is glad to avoid pain, but at the same time there is a large section of the community who hesitate to purchase immunity from a brief twinge at the price of being rendered wholly insensible. Notwithstanding the proved fact that a very insignificant, indeed infinitesimal, risk to life attends the careful administration of nitrous oxide gas, there are many sensible people who prefer facing an extraction to undergoing the administration of this innocuous anæsthetic. A certain number of patients who have no fear whatever of dying under the gas, have, notwithstanding, a deeply-rooted prejudice against being temporarily deprived of their senses, an undefined objection to the loss of their self-control, with which, however unreasonable, it is not difficult to sympathise. To such, an anæsthetic which simply deadens the part to be operated upon while leaving the general perception intact, appeals with irresistible force, and this feeling alone would account for the sudden and widespread popularity of cocaine—its use speedily became a mania, and, as was perfectly natural when we consider that the drug is a powerful poison, some unpleasant consequences resulted. The battle has continued to rage furiously between the ardent advocates and the none less ardent detractors of cocaine, while the drug itself has steadily won for itself an assured position, not, perhaps, all that our fancy painted it at one time, but far

higher at the same time than some anti-cocainists would have allowed possible.

When painted on to surfaces it is harmless, except when applied as a spray to the back of the throat, when unconsciousness may result ; but though invaluable when applied to exposed nerves or sensitive dentine, to lessen the discomfort attending the application of clamps, or to neutralise the irritability of sensitive mouths during the operation of taking a model (which in some alcoholic and hypersensitive persons is often a great nuisance), it is not much use applying it to the gums for extractions ; it is universally allowed now that to be of any use in alleviating the pain of an extraction the cocaine must be injected.

When injected the greatest care must be observed (1) in regulating the dose ; it is highly dangerous to inject more than $\frac{3}{4}$ grain, and $\frac{1}{2}$ grain is generally regarded as sufficient (Decker). (2) In preparing the drug freshly for each operation ; it does not keep well. (3) In being sure that the greater part of the fluid injected really passes into the tissues and does not regurgitate through the puncture ; with this object most operators keep their finger pressed in the puncture for a few seconds before and after withdrawing the needle. Although many patients may bear a larger dose than $\frac{3}{4}$ grain with impunity, susceptibility to its influence varies so much in different individuals that there is a distinct risk in exceeding that dose.

Cocaine first stimulates and then paralyses the central nervous system. It increases the respiration and causes death, either by respiratory paralysis or, according to one authority, by respiratory spasm. It paralyses the inhibitory nerves to the heart, and increases the rapidity of the heart-beat, at the same time raising arterial tension by stimulating peristaltic movement, and dilating the pupil, possibly by stimulation of the sympathetic system and consequent excitation of the radiating fibres of the iris.

Another important fact, which may largely account for the varying effects observed upon different individuals and, which is still more embarrassing, upon the same individual at different times is, that unless the kidneys are in fair working order the drug is not eliminated with due rapidity; if the kidneys are largely diseased a small dose may be attended with grave symptoms. In the fatal case which we reported last month one kidney was atrophied and the other tuberculous. In another case the injection of $\frac{1}{4}$ grain produced pallor, difficulty of respiration, rapid pulse and dilated pupils, accompanied by extreme giddiness, and the same symptoms in an exaggerated form have often followed the injection of doses varying between a grain and two grains.

Morphine, chloral and nitrate of amyl all counteract the action of cocaine more or less, but in cases of poisoning, Morro advises the inhalation of ether or chloroform with a view to removing the danger of respiratory spasm; after this small doses of chloral are most reliable as an antidote.

The concluding advice we would offer is, never to inject more than $\frac{3}{4}$ grain hypodermically and, where such a proceeding is possible, to ascertain the presence or absence of considerable kidney mischief before injecting the drug at all.

ASSOCIATION INTELLIGENCE.

Central Counties Branch.

A MEETING of the Branch was held at 71, Newhall Street, Birmingham, on Thursday, March 7th.

In consequence of the very inclement state of the weather the attendance of members was small, but those present had the satisfaction of hearing a very interesting paper read by Dr. Hogben upon "Chronic Brass and Copper Poisoning in relation to the Teeth."

The remainder of the evening was devoted to "Incidents of Practice," to which many members contributed various novel and useful experiences. It is intended to hold the Annual Meeting at Newark-on-Trent early in the month of June, to which town the Branch has been invited by the President-elect, Mr. R. F. H. King.

Full particulars of the programme for the day will be given in the May number of the Journal.

JOHN HUMPHREYS,
Hon. Sec.

Eastern Counties Branch.

A MEETING of the Council of the above Branch was held on Friday, March 29th. New Members were elected and other business transacted.

The Annual General Meeting will be held at Colchester on Wednesday, June 26th. Members willing to read papers, or having any other communication to make, are desired to give intimation of their intention as soon as possible.

W. A. RHODES, *Hon. Sec.*

53, Trumpington Street, Cambridge.

Irish Branch.

A MEETING of the Irish Branch will be held on Saturday afternoon, April 27th, in Dublin. The President of the branch, R. H. Moore, F.R.C.S., will give a short address upon "Caries and its Treatment." Papers have been promised by Samuel Smyth on "One Side of Dental Ethics;" R. Theodore Stack on "Dilacerated Teeth;" and specimens of interest will be shewn by G. H. Hare, Limerick, Booth Pearsall, Dublin, P. O'Meehan, Limerick, and R. P. Lennox, Cambridge.

W. BOOTH PEARSALL, F.R.C.S.I., *Hon. Sec.*

Midland Counties Branch.

ANNUAL Meeting at Liverpool, May 16th, 17th, and 18th, 1889.

On Thursday evening, May 16th, the President-elect, H. C. Quinby, Esq., and Mrs. Quinby will hold a reception for members and their wives at 3, Prince's Gate, West.

Friday, May 17th.—Medical Institute, corner of Hope Street.

9.30 a.m.—Council Meeting.

10.45 a.m.—Business Meeting (Members only). Election of Officers, and other business.

12 a.m.—President's Address. Open to ladies and visitors.

1 p.m.—Adjournment. The President very kindly invites all the Members to lunch with him at the Adelphi Hotel.

2.30 p.m.—Casual Communications.

3.30 p.m.—Papers on "Continuous Gum-work," by W. Simms, Esq., L.D.S., Manchester, and on "Anæsthetics in Dentistry," by Llewellyn Morgan, Esq., M.D.

6.30 p.m.—Dinner at the Adelphi Hotel.

DEMONSTRATIONS.

At the Liverpool Dental Hospital, Mount Pleasant, Friday and Saturday mornings from 9 to 10.30 each day. Electric Motors, Accumulators, Lamps, &c., &c., by Messrs. W. E. Harding, G. Brunton, J. C. Birch, and others. "Operative Dentistry," by T. Mansell, Esq., and others. "Continuous Gum-work," by Messrs. W. Simms and E. Houghton, of Manchester.

EXHIBITS.

At the Dental Hospital, Messrs. Ash & Son, and the Dental Manufacturing Co. will exhibit dental goods; Coxeter & Son will show a variety of new Electrical Apparatus, Dental Lamps, Nitrous Oxide Apparatus, Oxy-hydrogen Blowpipe, &c., &c.

Saturday, May 18th.—The President invites the members with ladies to accompany him on the river to view the Docks, Grain Warehouses, &c., and also to visit the Works of the Manchester Ship Canal. Lunch will be provided by him on board the steamer, which will leave the landing stage at an hour to be afterwards announced.

Any member wishing to read a paper, or introduce any subject of interest, or to contribute in any way to the proceedings, will be so good as to communicate without delay, as the time of the meeting is already pretty well filled up.

Programmes will be issued in due course, and members are particularly desired to reply at once to the invitation cards so that proper arrangements may be made.

W. H. WAITE, *Hon. Sec.*

6, Oxford Street, Liverpool.

ORIGINAL COMMUNICATIONS.

Temporary Fillings.*

By WALTER HARRISON, D.M.D., L.D.S.Eng.

THE object of these local meetings being, I know, of a mutual improvement character, and our worthy secretary has always asked for practical matter, with this in view I have ventured to occupy a short time to-night. I have nothing new to add to the achievements of dental science, but wish to learn from those who have had greater experience than myself upon the subject I have in hand.

Temporary fillings, I think, have not had the amount of attention they deserve, judging from what one sometimes meets with. A patient often comes to us, in the midst of a busy day, or perhaps a short appointment has been made by letter, and we find many cavities in various situations, tender to touch, very sensitive to thermal changes—perhaps several in the superior incisors; half an hour is at our disposal, what can be done; and some few days must elapse before any interview can be granted. We feel that more than one tooth must be made comfortable. Some temporary filling is to be inserted. My own system is first to see what teeth have dying or dead pulps—these being the offenders most often—then those teeth which present an unsightly appearance; this generally gives great satisfaction to the patient.

From my earliest operative experience, I had always had the greatest abhorrence of the mastic tribe; they are sticky to the instrument, when closely packed difficult to remove, always offensive, uncomfortable in interstitial cavities, and in the front of the mouth hideous to behold.

The properties demanded for a temporary filling are plasticity, non-irritating, non-conducting, quick-setting, easily renewed and respectable in appearance. I have used wax, plaster of Paris, modelling composition and various prepared compositions of my own with more or less success; the bother and time of making led me to try those upon the market—which considering all things are more satisfactory than those of my own manufacture. I will mention here that I am strongly adverse to using or recommending any

* Read at the Southern Counties Branch Meeting, Brighton, February 23rd, 1889.

patent or secret preparation ; those I am going to refer to, I think all will agree, do not come under this category.

For sensitive dentine, especially in those cases where there is a large quantity of softened tissue, I have met with great success with Fletcher's oxysulphate of zinc (artificial dentine), by incorporating with the powder a solution of carbolated gum arabic (about 25 per cent. carbolic acid). I prefer this liquid to that supplied by Fletcher, my own being thicker.

The manner of manipulation needs no comment ; it is very sticky and plastic, sets rapidly and is easily renewed, and I have known it to stand mastication as long as six months. The action upon the soft dentine in a few days is very convenient ; it seems to come away in a slough, and is easily removed with no pain, often in one large flake. It is an excellent non-conducting material. For fixing medicines, such as a devitalizing agent in a cavity, it is reliable and comforting, specially in awkward positions.

Another preparation which, in my hands, has proved itself extremely useful, is the temporary gutta-percha prepared by our Dr. Waite. It had one great drawback, namely, the red colour, thereby excluding its use in positions which were exposed to view. During the last few months, in reply to an enquiry, he has produced a similar filling of a white colour, which has greatly added to its utility. It is extremely plastic, can be packed and trimmed off with cold instruments and inserted under water. It is the most easy material I am familiar with to insert, being, of course, an excellent non-conductor, either by placing a small piece on the required spot or rubbing over the sensitive place. I know of no better root-filling, being applicable for all cases ; in my own practice I mix some antiseptic with it. Being, as I just said, very soluble in chloroform, there is no occasion to keep a solution by one, which is no easy matter ; in approximal crown cavities it wears away and also gets driven into the gum. By selecting the more suitable of the two for each particular case, one has a sweet and healthy temporary filling, and one in which, when a powerful escharotic is used, no anxiety need be felt—which I will own I have had with mastic ; and I am convinced of this, that arsenic outside a tooth causes more pain than within.

The oxyphosphates make excellent temporary fillings, either in the condition they are sent out from the depôts, or plus a small quantity of precipitated chalk or pumice, and in crown cases with a thin layer of amalgam over it. In young children I like copper amalgam as a temporary filling.

This question of temporary fillings has been lately forcibly brought under my notice. I was consulted by a lady who was suffering considerable pain in several parts of the mouth. She informed me that some teeth had been filled temporarily a few months previously, and was told would not be subjected to further mischief for a while. On examination I found some red substance—by the general appearance red base plate gutta-percha—in five different teeth in approximal cavities and exposed to the bite. The result was that periostitis was present more or less in these teeth and their neighbours. I had great difficulty in removing it in some positions, one superior molar especially; it was drawn about half-way up the side of the roots. So great was the cementitis I had grave fears at one time the organ would be sacrificed. Patients, we all know, often disappear with unfinished work for a considerable time, for which the operator is in no way to blame; but in this instance it was on the understanding that everything was all right for some time to come.

We all see the faults of others quicker than our own, so I trust I may be speedily corrected if I have strayed away.

LEGAL INTELLIGENCE.

Phillips *v.* Cottam.

A JURY had been empannelled to hear this action, which was brought by Harriet Jane Phillips, who was manageress in the dress and mantle making department at Mr. Robert Lloyd's, Glasgow House, and lived in Park Avenue, and she sought to recover from Messrs. Cottam and Sons, surgeon dentists, Oswestry, the sum of £25 damages alleged to have been sustained in consequence of injuries received from the alleged unskilful extraction of a tooth.

The particulars of the claim were as follows:—Doctor's bill, £3 8s. 6d.; total loss of time and salary, and board and lodging from November 13th, 1888, to January 15th, 1889, and partial loss of time from the latter date until the action was brought; extra nursing, nourishment and other expenses, occasioned by the loss of blood, illness, and prostration caused by the defendants' negligence, £21 11s. 6d. The negligence and unskilfulness of the defendants, the claim went on to say, was in fracturing plaintiff's jaw, in tearing her gums, in causing and allowing her to bleed,

and doing nothing to prevent or stop the bleeding or cure the fracture, in taking up the gums with the forceps, and not properly and skilfully preparing the gums previously to the extraction of the tooth of the plaintiff, and in not doing what was necessary after the extraction to stop or prevent the loss of blood.

Mr. W. Holloway Bott appeared for the plaintiff, and Mr. Malcolm Douglas, barrister (instructed by Messrs. Minshalls and Parry-Jones) appeared for the defence.

Mr. BOTT, in stating the case to the jury, read the particulars of claim and the damages alleged to have been sustained. Plaintiff, he said, was in receipt of a regular salary of £45 a year and an allowance of £5 a year for apartments. At the time plaintiff was in the service of Mr. Robert Lloyd, of Glasgow House, and there she received her daily board. She lost her salary for the period of two months, while she was incapacitated, and she also lost her situation. For the mere loss of salary the claim was therefore very moderate, but if they added to that the amount of the doctor's bill, some compensation for the pain she had suffered, and the cost of the extra nourishment and nursing she had to have, they would see that the claim might very reasonably have been twice the amount it was, supposing the defendants to be liable. His Honour would tell them that anyone who held himself out to pursue a particular calling——

HIS HONOUR: You had better not say what I shall tell them.

Mr. BOTT said the view he took, of course subject to correction, was, that where a person held himself out to pursue a calling such as the defendants pursued, he was supposed to possess the necessary skill to pursue it, and to take all proper care to discharge his duties without injury to his clients. He alleged that the defendants had failed to do that, and he therefore asked for damages.

Mr. DOUGLAS said he had two or three scientific witnesses, dentists from Chester, Liverpool, and Birmingham, and he wished to ask that they might be allowed to sit at the solicitors' table in order to hear the evidence.

Miss PHILLIPS, the plaintiff, was then put in the box, and on oath said that in November last she was working at Glasgow House for Mr. Robert Lloyd. On November 13th she went to the defendants' house in order to have a tooth extracted. She saw Mr. Cottam, junior, and he took out her tooth. He did not lance the gums, but at once applied the forceps. He extracted the tooth, and took up with it a part of the gums. Her gum was

torn very much, and it bled very much too. She called Mr. Cottam's attention to the bleeding, and asked him to look in her mouth. He did so. She asked him if the tooth was out, and he said yes. He also said the gum would come right by and bye, and that the bleeding would get better. He did nothing at all to heal the gum or to stop the bleeding. She returned to her employment, and continued at it until between six and seven the same day. She then felt very ill, and went to her lodgings. In the evening she sent for a doctor. Her gums had not stopped bleeding then, but she could not say how long the bleeding continued. Ultimately, Dr. Ward stopped the bleeding. Dr. Lewis also saw her, but it was Dr. Ward who stopped the bleeding. She supposed he did what he thought necessary. She believed she had lost a great deal of blood, for she was very weak. The first time she resumed work was in January. At Glasgow House she was manageress of the dress and mantle making department, and in the season she had sixteen girls under her. She did not receive her salary for the time she was away. When at work she had her meals at Glasgow House, and she also had an allowance of 2s. a week for apartments. She had been out of employment ever since, but since January 15th she had been in business for herself. She had had four teeth extracted previously, but that did not cause a similar bleeding.

In cross-examination by Mr. Douglas, plaintiff said it was a lower tooth that was extracted, but she could not say if it was the third tooth from the end. It was on the left side. She did not tell Mr. Cottam that he had hold of the gum, though she thought he had not taken hold of the tooth. A lump of flesh had risen up from the back of the other tooth.

Mr. DOUGLAS : You do not allege that he pulled that off ?

WITNESS : I do not know. It was there, but it has healed up now.

Mr. DOUGLAS : There was no unnecessary pulling as far as you could judge ?

His HONOUR : She cannot know.

Mr. DOUGLAS : She can, I submit. (To witness) : Was the tooth pulled out at the first effort ?

Yes, with great force.

Did you have any conversation with Dr. Cartwright, who examined you on February 12th or 13th ?

Yes.

Had you made any complaint to Mr. Cottam between November 13th and February 11th, when your solicitor wrote to him?

No.

Not of any description?

Not at all.

On February 11th you saw your solicitor, and caused him to write a letter to Mr. Cottam?

Yes.

On February 12th Dr. Cartwright came to examine you?

He examined my face and the inside of my mouth. I did not tell him anything. He asked if he might be allowed to look into my mouth.

Did he ask a number of questions?

I do not remember.

Do you remember whether the bleeding came from the socket of the tooth or from the gums?

I do not.

HIS HONOUR: How can she know?

MR. DOUGLAS: I am putting to her a conversation which took place, and I intend to call Dr. Cartwright. The whole issue will be whether the bleeding came from the gums or the socket.

HIS HONOUR: What does it matter? She cannot tell.

MR. DOUGLAS: I am bound to get it this way, or not at all. (To Plaintiff): Did Dr. Cartwright ask you whether you were able to tell whether the bleeding came from the socket or from the gums?

I do not remember.

Did he ask whether the pain had been very violent at the time of the extraction, and whether you complained at the time?

I do not remember.

And did you say you made no complaint?

HIS HONOUR: Suppose she did; it is three months after.

MR. DOUGLAS (to witness): Do you mean the blood was flowing freely when you left the surgery?

Yes, and nothing was done to stop it. I used lots of handkerchiefs.

Did Dr. Ward give you a lotion?

Nothing whatever.

Did he bandage the jaw?

No.

Not at any time?

No.

Mr. DOUGLAS : I ask your Honour kindly to take a note of that. (To witness) : I am asking as to Dr. Ward ?

PLAINTIFF : I beg your pardon, I thought you meant Mr. Cottam. My tooth was extracted about 3.30 p.m. on the Tuesday. On Wednesday my face was bandaged. I do not remember whether prior to that Dr. Ward had put cotton-wool in my mouth and pressed it down.

Were you in bed all the time ?

Yes ; I was not able to do anything.

Did you walk out ?

I walked out when I was able to, and when Dr. Ward gave me permission.

Mr. Cottam is a dentist, and presumably skilled ; why did not you go to him and complain of what had been done ?

I thought it best to put it in the hands of a solicitor.

HIS HONOUR : Do I understand that you did not go to Mr. Cottam at all after you first left him ?

PLAINTIFF : No, your Honour.

What ! you never went to see them at all ?

No, your Honour, I was ill.

Mr. DOUGLAS : It is about 10 minutes' or a quarter of an hour's walk from where you live to Messrs. Cottam's establishment, I think ?

Yes, about that.

Mr. RICHARD HY. WARD, L.R.C.P. and L.R.C.S., Edinburgh, examined by Mr. Bott, said he was an assistant to Dr. Lewis.

HIS HONOUR : How old are you ?

WITNESS : 31, your Honour.

How long have you been in practice ?

I have been in practice two years as a surgeon, and before that I was six years as an unqualified practitioner.—In reply to Mr. Bott, witness said he remembered being called in to see plaintiff. He looked into her mouth, and at first he naturally thought she was suffering from the extraction of a tooth. That was his first impression, but on examining the mouth more carefully, and after taking measures to prevent the bleeding, he found the bleeding arose not from the tooth cavity to any large extent, but from the edges of the gums on either side of the place where the tooth had been. From the appearances, he formed his own opinion of the cause ; it was that in extracting the tooth the edges of the gum

had been torn away. As a surgeon he should certainly say he should not take up the gums in the forceps with the tooth if he were making the extraction.

Would that be the proper way of doing it ?

It is not the way I have been taught to extract teeth.

Would it be wise to prepare the gum ?

I did not see this particular tooth, but I believe it was a stump. The bleeding was not stopped until the Wednesday night. The quantity of blood lost was a large quantity, sufficient to interfere with the health of the patient. When first called in I took the usual measures of plugging the tooth cavity, and covering over the gums with a solution of perchloride of iron to stop the bleeding. I also told the patient to keep her mouth closed. I found these measures did not stop the bleeding, and next day I put a pad of lint in her mouth between the upper tooth and the cavity of the extracted tooth, and firmly bandaged the jaws, so that the pressure from the pad of lint might stay the bleeding. I forget whether I used ice or not. I attended plaintiff for some considerable time. I asked Dr. Lewis to see her on the Wednesday, as the measures I had taken for staying the bleeding had not been successful ; and we had a consultation as to what further measures to take.

Mr. DOUGLAS (in cross-examination): As I understand, what you complain of as having been improperly done was taking a little bit of the gum away ?

WITNESS : I can hardly explain it, but there is a portion of the gum on either side of the tooth that fits on to it, and if that is torn, there is a little bleeding.

Yes, but in this case it was not a small portion that was torn. Beyond the tearing of the gum, whether great or small, was there anything you noticed ?

Nothing at all.

Do you know Mr. Salter, M.R.C.S. (picking up a book), who is a recognised authority on dentistry ?

No, I don't know him.

Did you pass any examination in dental surgery at all ?

No, sir.

Then, it is unnecessary to ask you any further question beyond this—Did you assist Mr. Bott or the plaintiff in framing the particulars of this action ?

Certainly not. It is against my wish that the action is brought at all.

His HONOUR : What do you mean ?

The plaintiff told me she was going to take legal proceedings, and I told her I did not think it a very wise proceeding on her part. Perhaps I was interested in saying it, because I had no wish to be subpoenaed in a case of this sort.

You did not mean to give any opinion as to whether defendants were liable ?

Oh, no.

Mr. DOUGLAS : I suppose you do not agree that the jawbone was fractured ?

I never suggested it. It certainly was not fractured.

His HONOUR asked if Mr. Bott was not going to call any dentist ?

Mr. BOTT replied in the negative, and said he was instructed far too long after the matter had taken place to have an opportunity of getting a dentist to inspect the condition of things so as to be of any use ; and he submitted that any dentist who had only seen his client that morning could give evidence of no value except as to whether the method of extracting the tooth was a proper method. The doctor said it was not.

His HONOUR : But he is no authority on that. Surely any dentist who heard the evidence could say whether the extraction was made skilfully or not.

Mr. BOTT said the doctor saw it at the time, and he was the only person who saw it.

His HONOUR said the doctor had told, in the presence of three or four dentists, what he had seen, and what happened. Any dentist could say whether the circumstances described were usual or unusual, or whether they indicated any want of skill.

Mr. BOTT said there was the other part of the case, that the defendants should have taken steps to stop the bleeding. A complaint was made on the spot when her mouth was bleeding freely.

His HONOUR said she never went back to the defendants.

Mr. BOTT : She was too ill.

His HONOUR said she might have sent for the defendants, and told them she was ill in consequence of their treatment.

Mr. BOTT : Possibly she had lost confidence in Mr. Cottam, and preferred to have the doctor ?

His HONOUR : I cannot help that.

Mr. DOUGLAS (in further cross-examination): Now, doctor, you say you treated plaintiff with perchloride of iron?

WITNESS: Yes.

Do you know that is a very objectionable treatment?

In the book I have a weak solution is given as the treatment.

Do you acknowledge Tomes as an authority?

Yes, I know Tomes.

Do you know what he says with regard to the treatment?

WITNESS said that he had not read Tomes, but he knew the name as an authority on dentistry.

Mr. DOUGLAS then read an extract from Tomes, to the effect that perchloride of iron was objectionable, because it exaggerated the wound and caused inflammation.

The WITNESS said he did not use perchloride of iron, but a very weak solution of it. The part did not become at all more irritable on account of it. It certainly got better.

His HONOUR said it appeared to him Mr. Douglas was asking questions which did not arise out of the witness's examination.

Mr. BOTT then called Mrs. Warmingham.

Mr. DOUGLAS said her evidence would only go to the question of damages. If the defendants were liable at all they did not say the damages were too much.

Mrs. WARMINGHAM was then sworn, and said she lived in Park Avenue. In November last plaintiff lodged in her house. One day in that month plaintiff had a tooth extracted. Plaintiff was confined to the house until December 23rd. She waited on plaintiff all the time, and supplied her with nourishment beyond what was usual, as she was so feeble. She kept a shop, but she had to leave it to attend on plaintiff. The plaintiff lost a great quantity of blood.

Mr. DOUGLAS said he had no questions to ask in cross-examination of the witness.

Mr. BOTT said he had another witness to the same effect, but after what his learned friend had said, he would not call her. That was his case.

Mr. DOUGLAS, on behalf of defendants, submitted that there was no evidence of negligence to go to the jury. The doctor, who was not present when the tooth was extracted, simply deposed to the fact that there was some tearing of the gums, but no dentist was called, or any other evidence given to show that that condition might not have arisen with the most skilful operation. He had

abundance of evidence—dentists from Liverpool, Chester, and Shrewsbury—all of whom were prepared to say the extraction was a skilful one; but he submitted that the time of the court should not be wasted by going on with the case.

His HONOUR said he was clearly of opinion that there was no case whatever to go to the jury. It was the plaintiff's fault entirely that she did not go to the defendants immediately she found the bleeding was going on. It was perfectly clear that any dentist, respectable, as he presumed the defendants were—of course he did not know any of the parties that came before him, and therefore he decided according to the evidence—would have come to see a patient on hearing that she was too ill to go out. Moreover, plaintiff's own evidence did not show any want of skill. In those circumstances he thought it would be unfair to call on the defendants for any defence—in fact, there could be no defence, because there was no case. He must therefore order a non-suit.

Mr. DOUGLAS applied for the conference fee of counsel.

His HONOUR: Certainly.

Mr. DOUGLAS: That will be a non-suit with costs of conference-fee.

His HONOUR said the registrar would understand that. He had allowed all he could allow.

REPORTS OF SOCIETIES AND OTHER MEETINGS.

Odontological Society of Great Britain.

THE ordinary monthly meeting of the above Society was held on April 1st, at 40, Leicester Square, Mr. HENRY SEWILL, M.R.C.S., L.D.S., President, in the chair. Present: a large number of members and several visitors, among whom was Mr. Jonathan Hutchinson, F.R.S.

The minutes having been confirmed, Mr. Sydney Spokes was balloted for and elected a member of the Society.

The CURATOR (Mr. Storer Bennett) showed specimens of the dentition of the black bear (Indian sloth bear) and of a muntjac. He pointed out that among deer, only three varieties possessed canine teeth, which were replaced by antlers. In the muntjac an intermediate condition existed, canine teeth and horns being present. As no specimen had previously been sent to the

Society, Mr. Storer Bennett felt the thanks of the Society were due to Captain Lloyd, who presented the present specimens and who had previously been a donor to the Museum. Another point of interest was that the horn grew in this instance from a mass of true bone and not, as is usual, from the facial bones.

Mr. F. J. BENNETT reported for the sub-committee appointed at the previous meeting that the sub-committee regarded Mr. Maggs' specimen as one of induplication of dentine.

Mr. CHARLES TOMES, F.R.S., narrated a case of epithelioma affecting the upper jaw, a second upper molar tooth which had been much treated, its palatine being separated from its labial roots, screws inserted and a ring placed round the remains of the crown, while a large amalgam contour crown had been built up. After filling, the tooth remained quiet for eighteen months, when the patient came to Mr. Tomes and complained that it was loose. Examination showed that fungous granulations were springing around the tooth. The molar was removed the next day and the socket found to be filled with ugly-looking epitheliomatous granulations. The case was shown to Mr. Christopher Heath, who pronounced the disease to be epithelioma. Strips of lint soaked in chloride of zinc paste were inserted and covered by a vulcanite plate, and a slough came away. Although the surface looked healthy there were distinct evidences of epithelioma being still present, and so, in the absence of Mr. Heath, who was at that time ill, Sir Joseph Lister operated and gouged and chiselled away the bone, but did not resect the jaw. This was done three years ago, and as no recurrence had occurred Mr. Tomes felt the patient was now safe.

The PRESIDENT had met with similar cases. He pointed out that in cancerous disease of the antrum the loosening of the molar teeth was among the first symptoms. He had known of a case in which a molar was removed and a mass of epithelioma was found attached to its roots, and the diagnosis of cancer thus confirmed. The President showed a case of hyperostosis of the lower jaw. Patient, a gentleman aged forty, had been under observation for ten years. The deformity consisted in the unusually large size of the lower jaw and undue length of the ramus, so that the maxilla could not be protruded nor be made to bite upon the mandible. The alveolar border was normal, the body being symmetrically affected. The patient himself stated that he had always been "underhung" and did not consider the jaw was

increasing in size, but admitted that now there was tenderness over it. Mr. Sewill inclined to the belief that the bone was bigger than when first seen by him. The molars had been gradually lost through absorption of the sockets, but the other teeth still remained.

Mr. JONATHAN HUTCHINSON, who had seen the case in consultation, thought that although the evidence as to the increase in size of the jaw was inconclusive, yet the undoubted tenderness rather pointed in favour of its reality. All points considered, he thought the case might be an early stage of the disease called acromegaly, in which the lower jaw and the fingers and toes were increased in size. In osteitis deformans, a disease in which the bones of the skull also increase in size, the hypertrophy is never confined, as in Mr. Sewill's case, to the jaw.

Mr. C. S. TOMES remarked that the patient gave one important piece of information showing that the jaw had really increased in size since childhood, namely that an effort had been made to remedy the condition by the use of an inclined plane. Had the condition then been what it now is, Mr. Tones thought no such effort would have been made. Mr. Tones also referred to a case of unilateral hypertrophy of the lower jaw under the care of Mr. Christopher Heath, in which that surgeon had excised a portion of the jaw with a beneficial result.

Mr. JONATHAN HUTCHINSON then read a paper upon "Diagnosis of Disease by the Teeth." Riggs' disease was, the lecturer thought, comparable in its pathology with sycosis, in which there was a definite inflammation in the hair follicle closely analogous to the condition met with about the teeth in pyorrhœa. In sycosis affecting the nails, a rare disease, suppurative inflammation attacked the roots of the nails both in the hands and feet. Analogous conditions were present in sycosis of the beard and so-called tinea tarsi, in which the eyelashes were attacked. Mr. Hutchinson believed that no cryptogam was present in any of these diseases, but that a local suppurative inflammation existed which spread by actual contagion, one purulent focus infecting others capable of taking the disease. Pyorrhœa alveolaris seemed also explicable upon the same lines and might, it was submitted, be regarded as a purely local affection—a locally contagious suppurative inflammation affecting the alveolar process. Accepting this view, it was not surprising to find the disease attacking persons in excellent general health, and his experience went to show that

the sufferers from this complaint were usually in good health. Again, the line of treatment in these contagious suppurative inflammations which proved the most successful was not a general one, tonics and hæmatinics failed, for local treatment alone offered hope of success. He believed the same might be said of pyorrhœa. Passing to the second subject of his paper Mr. Hutchinson said he had met with numerous cases in which the lips and tongue had suffered injuriously as a result of filling the teeth with amalgam. He had stated this some years ago, and further experience had confirmed his opinion. Black amalgams were the cause of much "sore tongue," but no similar condition occurred when gold plugs were used. In many cases of intractable sore gum, Mr. Hutchinson had recommended the removal of all amalgam fillings from the mouth, with the result that the sore gum healed. This had occurred even when the fillings had been put in by good dentists. He believed that the composition of many amalgams was a secret, and some at least were believed to undergo solvent changes in the mouth, which might account for their deleterious action upon the mucous membrane. He cited a case of an American doctor who suffered from sore tongue and who, although denying any venereal taint, had been unsuccessfully treated for syphilis, but who when he had had his amalgam fillings removed was cured.

Referring to SYPHILITIC TEETH, Mr. Hutchinson said he had little to add to what he had already enunciated. He regarded the test teeth of hereditary syphilis to be the upper central incisors in the permanent set. Lesions in other teeth were commonly due not to syphilis, but to the mercury used in the treatment of the complaint. The indication of syphilis given by the "test teeth" Mr. Hutchinson regards as absolutely reliable, but the absence of lesions in the teeth would not in his opinion predicate the absence of syphilis. When the tooth lesions are present, interstitial keratitis is also almost always to be detected, and when absent, the eye lesion is also wanting. In persons whose teeth do not show the test conditions, and who yet inherit syphilitic taint, there is a tendency to severe phagedenic throat affections, which appear after childhood.

The teeth are greatly affected by stomatitis, and the chief cause of this is mercury. The enamel is found deformed as a result of inflammation of the tooth sacs arising from the incautious use of mercury in early childhood. The first permanent molars are the test teeth of this condition, and may be compared with the pre-

molars which are not affected. A common accompaniment of stomatitic teeth is lamellar cataract, due to convulsions. The presence of these conditions offers a valuable hint as to treatment of adults, for if present there will probably be a history of laryngismus stridulus, convulsions, &c., and a strong probability that even small doses of mercury will produce salivation and other injurious erethism. Mr. Hutchinson lastly drew attention to various correlative conditions existing between the teeth and other structures. Mr. Moon had shown that "rat teeth" were due to suppression of the lateral denticles, and this condition the lecturer found often associated with absence of hair—alopecia—and microphthalmos. He had also published cases in which an absence of hair was associated with small ill-formed teeth, but without microphthalmos. The dentition in rachitis was only affected just as the other structures of the organism were, and so no definite meaning was to be attached to so-called ricketty teeth; they were the outcome of a general condition which affected them as it affected the bones or other systems. And the same remark applied to the wrongly termed "gouty teeth." Gout, however, gave rise to a wearing down of the teeth, because in it teeth grinding was a common vice.

The PRESIDENT spoke in eulogistic terms of Mr. Hutchinson's address, but took exception to his remarks upon the injurious effects of amalgam fillings upon the teeth. He (Mr. Sewill) had seen very many cases indeed of amalgam stoppings, and yet had never come across one in which sore mouth had followed their insertion. Mr. Hutchinson's remarks about Riggs' disease would, he thought, lead to important changes in the methods of treatment now in vogue. Although he had seen many thousand cases of children, he had seen very few syphilitic teeth, and thought that undue importance had been attached to them in diagnosis. As mercury was now given he doubted very much if stomatitis was at all likely to result.

Mr. CHARTERS-WHITE felt the paper was a most suggestive one. In reference to the treatment of Riggs' disease, Mr. White believed it was too often lost sight of, that, as the roots of the affected teeth were necrosed, and nature clearly was attempting to throw them off, it was unscientific to use any procedure which tended to retain the teeth in the jaw.

Mr. C. S. TOMES considered a point at variance with Mr. Hutchinson's view of local infection in Riggs' disease was the

fact that the teeth affected were often upon different sides of the mouth and not contiguous. The undoubted success which followed the heroic treatment advocated by Dr. Riggs was little likely to be followed in this country, but it seemed to show in favour of the local nature of the affection. On the other hand, he (Mr. Tomes) had never seen a case of complete recovery from pyorrhœa, so, that like sycosis which was only curable by epilation, Riggs' might be only curable by removal of all the affected teeth.

Mr. F. NEWLAND-PEDLEY emphatically challenged Mr. Hutchinson's remarks upon amalgam fillings. Undoubtedly large amalgam fillings might chip, and rough edges cause irritation, but he did not believe the good forms of amalgams, if properly inserted, were ever deleterious. Possibly the commoner forms might be harmful, but he felt a sweeping accusation against amalgams was not likely to be maintained.

Mr. STORER BENNETT acquiesced in Mr. Newland-Pedley's remarks, and he felt sure that dentists whose work brought them in contact with so many more cases of amalgam than could come under the eyes of a surgeon, were far more likely to form an accurate opinion upon such a point as that which had been raised. He leant towards the belief that constitutional debility was very often associated with pyorrhœa, and instanced the cases of animals in confinement, which were often afflicted by it, in common with pneumonia, septicæmia, tuberculosis, and other maladies liable to attack individuals whose vitality was depressed.

Mr. MOORE (Croydon) inclined to believe that in pyorrhœa one tooth infected others, and so thought removal of the diseased teeth a scientific procedure.

Dr. CUNNINGHAM (Cambridge) referred to the importance of medical men and dentists meeting in consultation, as they often regarded a disease from different standpoints. He also narrated a case in which a clay pipe had worn down the teeth.

Mr. WALTER COFFIN took exception to the statement that pyorrhœa was incurable; he believed he had met with cases which had been cured. He preferred to rely upon an antiseptic and caustic treatment, and felt convinced, if the pus pouches about the teeth were thoroughly cleared, good results would ensue. He admitted that while young patients were to be cured, those of more advanced age had a much poorer chance of so happy a consummation.

Mr. HUTCHINSON having replied, the PRESIDENT announced that the next meeting would take place on May 6th, when papers would be read by Mr. Kirby on "Electrical Progress and Dental Practice," and by Mr. David Hepburn on "Suction Chambers, Air Chambers, and Artificial Rugæ."

Dental Hospital of London.

THE Annual General Meeting of the governors of this Charity was held at the Hospital, Leicester square, on Thursday last, Sir EDWIN SAUNDERS (one of the trustees) presiding.

The annual report of the committee—which was taken as read—congratulated the governors on the continued success and prosperity of the Institution. It was very gratifying to note the continued increase in annual subscriptions, it being an addition to the reliable income of the Hospital. The total number of operations performed last year was 51,406, being 3,965 in excess of those of 1887, and 29,412 in excess of the number treated in 1874, when the Hospital was removed to its present site. The committee regretted, however, that there was still a deficit of £3,000 in the mortgage debt account, and they sincerely appealed to those friends of the Charity, who had not already done so, to kindly assist them to reduce this debt which pressed so heavily upon the Charity. The committee recorded their obligations to the medical officers for their zeal in the performance of their duties, and commended the energy and ability with which Mr. Pink had discharged the multifarious duties of secretary.

On the motion of the CHAIRMAN, seconded by the Rev. J. OAKLEY COLES, the report was unanimously adopted.

Mr. DURLACHER proposed, Mr. WASH seconded the re-election of the retiring members, which was carried.

Mr. S. J. HUTCHINSON moved, Mr. W. HILLS seconded, and it was resolved that Messrs. G. C. Ash and F. A. Burrows be re-elected auditors.

On the motion of Mr. J. H. MUMMERY, seconded by Mr. MORTON SMALE, the treasurer was re-elected; and on the proposition of the CHAIRMAN, seconded by Mr. FORSYTH, thanks were voted to the treasurer, chairman and committee of management, the medical staff and auditors.

The CHAIRMAN then said: The report is a record of increased

work and usefulness and of increased resources which, if not quite adequate to our desires, are at least such as not to give rise to discouragement or despair. The recent enlargement of the building, while it has enabled us to undertake a larger amount of work and to carry out that work efficiently and with increased comfort to all concerned, has necessarily added very considerably to our annual expenditure. Thus it will be seen that while in 1886 the expenditure under the head of drugs and surgical appliances was £439, and in 1887 was £522, in the year just closed it amounted to no less than £766. This seems a sudden and startling increase, due, no doubt, to the full development of the capabilities afforded by the enlargement of the Hospital; for we find that the cases treated last year exceeded those treated during 1887 by 4,000. And here I would remark, lest to any one the amount under this head should appear excessive, that the accounts are submitted to the scrutiny of the sub-committee of finance before being presented for payment to the grand committee. It is perfectly obvious, however, that after observing all possible precautions and practising a wise—I will not say a rigid—economy, which is in some cases unwise, there must necessarily be an expansion of our outlay in warming, in lighting, in household care and cleaning, and in various other directions, which will render what might have been formerly a sufficient income quite inadequate for our present needs. And it is therefore with great satisfaction that we see in our report that there has been a steady increase in our annual subscriptions, which were £703 in 1886, £782 in 1887, and £807 in the past year; while the donations from all sources have risen from £754 in 1886 to £992 in 1887 (the year of Jubilee), and £939 in 1888. And it is only fair to say that this is mainly due to the active interest in our welfare taken by our energetic secretary, Mr. Pink, who is not content to wait till the public find us out and bring their unsolicited contributions, but pleads our cause and makes known our work and our needs by every legitimate means. For the public are apt to turn aside from an institution which takes charge of one class of ailments only, and to take refuge in the objection that by confining their contributions to the larger hospitals they are helping a wider range of beneficence. To counteract this tendency, a judicious and frequently reiterated advocacy is necessary; and where this is conscientiously done, it seems not only fair but good policy to render the advantage to some extent

reciprocal. There are services which defy computation, which it is impossible to measure or to weigh in the balance—which, in a word, cannot be bought or estimated by money's worth. Such are zeal in the interests of the Institution, enthusiasm in ensuring its success, by carefully watching every opportunity of speaking a word in season, ascertaining the best way of approaching public bodies and the right time in which to do so, and adroitly appealing to that comparatively small section of the great population of this city from whom alone all such philanthropic enterprises derive encouragement and support. It is idle, then, to take the amount that may be expended in paper, printing, and postage, as a measure of the remuneration to which a zealous secretary is fairly entitled. As well attempt to form an estimate of the value of a work of art by the cost of the canvas and the pigments employed in its production. Then the consciousness that the remuneration is given in a niggard and grudging spirit cannot but have a benumbing effect on his efforts. A man's best exertions are only to be expected under the stimulus of generous appreciation, and it is therefore a wise policy to make the interests of the official run parallel to those of an institution. In doing so we are only acting on the principle which is almost universally adopted in commercial enterprises—at least of those which are conspicuously successful. And in our own case we are able fearlessly to point to results which show a very large addition to the resources available for carrying on the increased work consequent on the enlargement of the Hospital. With us it was a prime necessity, owing to the costliness of materials and appliances, not to be restricted in our income, and the result is an ample justification of the means. We could not afford to wait for that public aid which will never come unsought, and which is likely to remain unsolicited, while human nature is constituted as it is at present, by an under-paid official with an inelastic salary. The whole subject of hospital management, at least in the out-patient department, and hospital support is at the present moment in a most unsatisfactory state, the consideration of which becomes daily more and more urgent. The expedients that have to be resorted to for raising income for these noble institutions are, for the most part, inefficient, ephemeral, and in some cases, distinctly ignoble; and the question which is anxiously engaging the thoughts of the medical and philanthropic world is, What means should be adopted to place them on a more satisfactory basis, and to enable them to gain a larger share of public

favour and support? Whether the inquiry will eventuate in the formulation of some scheme for rendering them self-supporting, or partially self-supporting, without converting them into competitors with the practitioners in the district in which they are situated, and without diminishing their clinical value in the interests of the schools with which they are associated, or in seeking—in all probability a vain hope—for State aid, or again, in devising some machinery by which the proposed weekly rate of one penny from the half-million of working men, who, with their wives and families, are supposed to be the largest recipients of their benefits (for the destitute are provided for by the infirmaries connected with the unions), whether or not it might be possible to render such rate a permanent and reliable source of income—whatever may be the outcome, the inquiry cannot but do good by bringing the subject under public notice. All these schemes have their own special advantages, but all have to be carefully scrutinised lest they develop some objectionable feature. The system of paying wards commends itself by its charming simplicity, every applicant in these days, either by himself or his belongings, or by the kindness of employer or friend, being able to defray the cost of his maintenance while in hospital; but there is a rock ahead, in that it may become a sort of medical co-operative association. On the whole it would seem that the scheme of the penny contribution would be the best solution of the difficulty, if it could only be brought into a permanent and workable condition. In the meantime and until some scheme is formulated, it would not be wise for us to jeopardise our success by rash and needless interference with arrangements which have hitherto been found to work in a satisfactory manner. With respect to the causes of this apathy on the part of the public towards these valuable institutions, it can hardly be referred to any want of confidence in their proper administration, or that the beneficent work which they undertake is not conducted in accordance with the most advanced teachings of biological and sanitary science; still less is it to be attributed to any decay of charity or want of sympathy with suffering humanity; for there never was a time probably, in our history, or indeed in the history of any nation, more conspicuous for active benevolence. Not only do associations abound for promoting health and comfort in the home, for securing open spaces for air and exercise, for providing visits to the country or the seaside for children and convalescents, for shelters for the outcast and destitute, but the

popular beneficence now embraces a still wider range; and provides a home for lost dogs and rest and refreshment for the worn and over-driven cab-horse. Why, then, it may well be asked, do our hospitals languish? I believe the answer to be, That the social conditions are changed, and are no longer what they were when these institutions had their origin. When our large hospitals were founded the poor were very poor, and the working man led a hard life on coarse food, and but a scanty allowance of it. Medical skill and science were in few hands and far out of his reach. And the only means by which such skill could be made available for him, and the great gulf be bridged over that separated the masses from the classes, was the hospital. But now all this is changed. The working man lives well, and, indeed, is rather critical about his food, and his wife and children are well—indeed, smartly, dressed; medical and surgical aid is to be had in every neighbourhood and within his means. Thus the middle class, the chief supporters of these institutions, no longer feel themselves called upon to provide for him eleemosynary aid. So that it would seem that the hospital of the future must either be a paying hospital or, which would seem to be a preferable alternative, a hospital supported by a large number of small subscriptions derived from the class for whose especial benefit it is established.

Mr. G. GREGSON, in moving a vote of thanks to the Chairman for presiding, desired, on behalf of the meeting, to thank Sir Edwin for the valuable address he had delivered. They were always pleased to see their Chairman amongst them and trusted that he would long be spared to occupy that position.

Mr. H. M. PHILLIPS seconded the motion, which was carried with acclamation.

The CHAIRMAN, in thanking the meeting for the vote, remarked that it gave him great pleasure to do what he could to forward the interests of such an important Charity as the Dental Hospital.

Students' Society, National Dental Hospital.

At a special meeting of the Students' Society of the National Dental Hospital, Friday, April 5th, F. HENRI WEISS, Vice-president, in the chair, the following addition was made to the bye-laws of the Society.

XVIA. "The Council shall at the meeting in December nominate the officers for the ensuing year, such nomina-

tions being posted up in the Hospital twenty-one days prior to the Annual General Meeting. Members of the Society shall have the power to substitute the names of any members willing to serve."

The ordinary meeting which followed was honoured by the presence of a lady visitor, Miss Day.

Some interesting casual communications were submitted to the Society. Mr. FISK mentioned a case of fracture of a central tooth. The crown was found to be fractured and came away in the forceps, bringing the pulp bodily with it.

Mr. R. DENISON PEDLEY mentioned a case of necrosis of a lower temporary molar and alveolar process, involving the cap of bicuspid below. He also showed a photograph of a woman after artificial restoration of the superior maxilla, which had been removed for sarcoma.

Mr. R. Denison Pedley read a very interesting paper on "Iodoform and its Uses in Dental Surgery," and showed a specimen of iodoform paste.

After an excellent discussion on the paper, the meeting adjourned until Friday, May 3rd, when Mr. Allnutt will read a paper on "Anæsthetics."

The Students' Society of the Dental Hospital of London.

At an ordinary meeting of the above Society on February 11th, WILLIAM HERN, Esq., President, in the chair,

The SECRETARY read a letter of acknowledgment and friendly greeting from Mr. L. S. Rosenthal, Secretary of the Students' Society of the New York College of Dentistry.

The PRESIDENT announced that the Council had decided that "Readers of papers may have their diagrams printed in the Transactions at the cost of the Society, up to the amount of 5s., provided these same diagrams be shown at the meeting when the paper is read; that they illustrate points in the paper; and are, in the opinion of the Council, of sufficient merit to warrant their being printed." He further announced that finished reduced copies of these diagrams must be handed to the Secretary before the night on which the paper is read; and that members could at their own cost insert more diagrams than the above amount would pay for.

After some interesting casual communications, the President then called on Mr. M. Woolf for his paper on "The Adaptation of Gold and Richmond Crowns."

After some introductory remarks, Mr. WOOLF explained that the root should be ground down a little below the gum on the labial surface, and described the further proceedings as follows:—

The remaining portion of the tooth should now be trimmed with a small corundum wheel so that the circumference of the crown may not be larger than that of the root over which the band is to fit, and in order to do this it will be found necessary to remove nearly every particle of enamel, which can be done by using a short, sharp, curved scaler, bent so as to take an oblique direction along the side of the root. The success of the operation does not depend so much upon the total removal of the enamel, as upon so perfecting the work that no sharp corners or bulges may exist, which could prevent the band slipping into its proper position.

The importance of preparing the root in the before-mentioned manner cannot be overrated, and neglect in this particular is one of the principal causes of failure, for, if the crown should be passed over the enlarged end, it must necessarily have a space beyond between it and the root which it is impossible to close. The result of this might be that this space would get filled up with decomposed blood and broken down tissue, and so cause disease, besides probably setting up inflammation.

The next thing to be done is to drill out the root in the usual manner, taking care to thoroughly cleanse the canal of all debris on finishing, so that the pin when inserted may run down easily into its place.

The canal should be larger than is absolutely necessary for the admittance of the pin, having the walls slightly undercut here and there in order to afford a good hold to the cement when finally inserted.

The root is now ready for the fitting of the band, which in all cases of gold and Richmond crowns should be made to the root itself, as both time and trouble are thus saved, for should the band be a little too large the defect can easily be remedied by cutting along the joint and drawing one edge slightly over the other and soldering; on the other hand, if the band were too small it could be stretched by placing it on the beak of a small anvil and giving one or two light blows with a rivetting hammer; but if not made

to the mouth the imperfection would not be noticed until the work was completed.

Should your own or your patient's time not permit of the lengthy stay necessary to complete the more important part of the operation, the difficulty may be overcome by taking an impression with the band and the pin in position upon the root, so that on pouring with either equal parts of sand and plaster, or marble dust and plaster, you have a very fair model to work and solder to, the pin and band having been firmly fixed in the plaster or Stent's impression before pouring.

Having lighted a small Bunsen's burner and got the borax and instruments ready, which should comprise a pair of half round pliers for bending up the band, a pair of common fine tweezers for holding it in the flame for soldering, a pair of fine-pointed shears or strong rounded scissors for trimming up your band, and lastly, a fine cut half round file for smoothing the edges and filing up after soldering; then take the measurement of the neck of the root, either with tin foil or fine wire.

After cutting your gold as near as possible to the size required, using coin gold of about 32 American standard gauge, you proceed to bend up your band into shape with your half round pliers, and when fitted remove, pressing slightly together so that it springs over the tooth when tried on.

You now mark with a sharp instrument the line where the already levelled and overlapping ends meet, so that should the band tend to spring a little on being removed, it can be easily altered without trying on again.

It is as well to make the band slightly smaller than this mark, so as to allow for any stretching that may take place, and should it then be found that it is too small the defect may be overcome by placing it on the horn of an anvil as already described.

The band has now to be soldered, but before going into the details of this, I should like to say a few words about the solder. From experience upon that point I have come to the conclusion that the use of good solder is of just as great importance as using coin gold instead of 18-carat for the bands, on account of the action of the various acids they have to withstand; I have seen several cases where the crown has been in the mouth for some time, but has tarnished wherever the solder has been finished.

Only a short time ago I noticed that in one of my own cases

the solder had likewise changed colour, although the crown had been inserted but two weeks previously and soldered with the ordinary No. 1 solder. But although there are some cases where even pure gold, however nicely polished, will tarnish, yet in the majority of cases it could be prevented by using a solder as good in comparison as the metal used for the crowns.

Though I have only seen three or four cases where the top of the crown was made of pure gold filled up with melted coin scraps, and the band made of coin gold had been soldered to the top with 20-carat solder, yet they all appeared to have retained their colour; I should therefore advise the use of 20-carat solder in the majority of cases.

To return to the soldering of the band. Having placed a small piece of solder on the cap which has been previously boraxed, hold the band with the fine tweezers over the Bunsen burner until well flushed. It is now soldered, but before trying on, it is best to file down any rough parts, and to chamfer the edge of the band that is passed under the gum, taking care to burnish well in order to prevent any irritation.

The gold band is now ready to be placed upon the root; a piece of ivory or the back-bone of a tooth-brush filed up will answer the purpose, driven up with a mallet: they must, however, be serrated at one end to prevent any slipping taking place.

Great care must be used not to work the band up too far, it being only necessary to just go below the gum on the lingual, and only just enough to catch on the labial surface.

Having marked the line of contour of the margin of the gum upon the front of the band, the proper level can then be cut and the edges squared, so that it makes an angle with the horizontal portion. Care must also be exercised that the band is not too high on the lingual surface, allowing both for building up and a free bite.

The next step is to bend a small piece of gold to correspond with size of the band, well borax, and taking hold of the edge with your fine tweezers place the band on it in such position as to fit perfectly, so as to allow the solder to run all round.

Although this is not always done when making a Richmond crown, I should strongly advise it, as it is practically impossible to fit a tooth so accurately to the band as to prevent all moisture from oozing through.

Having tried the cap on the tooth take a fissure bur, the same

size as the wire to be introduced, and cut through the gold just over the canal, so that the wire slips easily into place.

The tooth can now be fitted to the front of the band, having previously been backed with either fine, or coin, gold. This finished, the cap is removed, and the tooth attached by strong wax and again placed in the mouth while the wax is warm, so that any slight alteration in position which is necessary can be easily made. The whole can now be removed and invested in equal parts of sand and plaster for soldering.

Before finally inserting the Richmond crown fill the apex of the root, and having thoroughly dried the crown and canal with hot air, mix some phosphate cement very thin, pass some up the root and put some in the crown, then take it between your two fingers and press firmly into place, giving one or two small taps with the ivory hand mallet. It should be held in position for a few minutes, until the cement is sufficiently hard to prevent displacement.

After the cement has hardened pass a fine instrument under the gum in order to remove any surplus cement which may have squeezed out, and which might, by remaining there, excite inflammation.

The chief advantage of Richmond crowns over other ordinary methods of pivoting is, that once the root is properly enclosed in the metal cap caries cannot take place, owing to it being entirely protected from the fluids of the mouth. The only disadvantage, to my mind, that can be said to exist, is that it is permanently fixed, and a difficulty arises with regard to accidents, owing to its removal not being an easy matter.

But this difficulty may be overcome by fixing the Richmond crown in the mouth with gutta-percha. This presents an advantage over the cement not only by its easy removal in case of accident, but by its being unaffected by moisture.

But supposing the crown had been inserted with the cement, and the tooth become broken, could we not, by displaying a little ingenuity, which appears to be one of the chief characteristics of the profession, contrive by some method or other to fix on a new front? If, after removing the debris of the broken tooth, we were to drill a couple of holes through the original backing, just large enough to admit the pins of the new tooth, could not the pins be bent together and packed round with amalgam? or, perhaps, a more satisfactory operation would be to adjust it by means of a screw and nut.

But although it is as well to be guarded against accidents, yet how often do we meet with cases where the front has got broken?

Turning to the question of the gold crown, Mr. Woolf said :

The advantages which it presents are :

Firstly, that it may be used successfully in the majority of cases.

Secondly, that without difficulty it can be kept absolutely clean.

Thirdly, that it will make the patient feel safer from accident than any other process of restoration.

And, fourthly, that it is one of the very few processes which admit of the restoration of articulating surface, for should the bite not be quite perfect, the surface can be ground down to suit any little defect that may exist, and is therefore most compatible with the laws of nature.

In selecting roots for the application of gold crowns, care should be exercised to select those only which are firm in the alveolar process, or which can be made so by treatment ; also, that there should be sufficient of the decayed tooth left above the surface of the gum to allow a band of gold to encircle it ; but in some instances where only one side is broken away beneath the gum, and the remaining walls are strong, it could be built up to advantage with amalgam, and then have the metal cap fitted.

Gold crowns should only be applied to molars and bicuspid, but if an objection is raised with regard to metal caps on bicuspid being unsightly, then an ordinary porcelain front can be adjusted after the style of the Richmond crown.

This latter method presents the same advantages of excluding the moisture from the root as the Richmond crown, and is preferred by some instead of the special crowns, of which the dépôts do not keep a sufficient stock for matching.

If the root affords but little hold to the crown it can be strengthened, before permanently inserting, by fastening a strong well roughened pin in the root canal, so that the end projects into the cap, and is grasped by the cement with which the crown is filled.

The metal best adapted to this kind of work is coin gold rolled to about 32 American standard gauge for the bands and from 38 to 40 for the tops ; although pure gold is preferred by many for the masticating surface, yet being by nature of great softness is more likely to wear away, and would then cause the solder or melted coin scraps beneath to become visible.

In order to illustrate the method properly I shall take for example a molar tooth which has had its roots treated and filled.

Having prepared the tooth with the same care and in exactly the same manner as if for the Richmond crown, proceed to fit the band.

The gold to be used should be cut a little deeper than the proper pattern, to allow for adjusting to the contour of the gum. This having been done and the band fitted and soldered in the way already mentioned, place it in position in the mouth in order to gauge the height necessary, not forgetting that the top has yet to be soldered on.

This can be done by using a sharp instrument to mark the band all round, so that on removing the surplus, it can be cut down to the proper level by holding the top edge against the flat side of a corundum wheel, in order to obtain a perfectly level rim. It is now ready for the top.

Now, as the restoration of articulating surfaces is claimed to be one of the great advantages of this method, it is necessary to understand one or two of the modes in use. The quickest, easiest, and cheapest method of all is that of the zinc die, as one can always have a sufficient stock at hand to select from, and if necessary could make a particular die to suit any bite within a few minutes.

Another way of adjusting the crown to the bite is to solder a plain piece of coin gold which has been cut to the required shape on to the band, and then having invested in sand and plaster, cusps are made to the required height and size, either from gold plate properly shaped, or by fusing gold into globules by the blow pipe and subsequently flattening them with the hammer; these are then placed in position and soldered to the grinding surface. But although this method is of as great utility as the former yet it necessitates a longer time.

Another new and useful method for striking up tops is that of the S. S. White's die plate, one of which Dr. Walker has kindly lent me for this evening. But taking for granted that the zinc die is preferred we proceed to strike up the gold top on a piece of lead with a heavy hammer, taking the precaution to place a piece of thick tin foil between the gold and the lead, as should this be neglected and a small particle of lead stick to the gold top the result might be disastrous when soldering. Having stamped up a sharp impression upon the gold flush with 20-carat solder, touch

the flat edge of the band with borax, place in the desired position on the flushed side of the top, and by heating over the Bunsen burner the top and the band will solder together most satisfactorily; trim up to the required contour and polish in the ordinary way. It is then ready for the mouth.

On finally inserting the crown the same care should be used as in that of the Richmond crown, namely, that the tooth and cap should be perfectly dry. Thick bibulous paper is very useful in such cases when placed on either side of the tooth to absorb the moisture.

There are several opinions as to whether it is necessary to have a small hole drilled in one of the cusps through which the surplus cement may escape, but I find on inserting a crown that however well it may appear to fit, there is always some cement squeezed out under the gum, before it gets driven thoroughly home, and I am of opinion that it is safer to put a little more in the cap than is absolutely necessary.

After a lively discussion on the paper, the PRESIDENT announced that the next meeting would be on Monday, March 11th, when Mr. Cohen would read a paper on "Neuralgia."

The proceedings then terminated.

MINOR NOTICES AND CRITICAL ABSTRACTS.

Osteo-fibroma of the Two Superior Maxillary Bones: Recurrence: Removal by Piecemeal Enucleation.

J. C., a woman, aged twenty-two, having no hereditary history, and who had undergone a previous operation on November 17th, 1888. Nine years previously she had noticed the development of a tumour in the right upper jaw, which in course of four years had reached the size of a hen's egg. This tumour had been operated on five years ago, when it was ascertained that the left upper jaw was also the seat of a much less voluminous tumour. Lately this later tumour had considerably increased, so as to deform the face in a remarkable manner.

Present Condition.—The two upper jaws are attacked, but the left especially is invaded by a tumour of the size of the head of a full-grown foetus. Half of the face is deformed; the *alæ nasi* are raised; the naso-jugal and orbito-palpebral furrows effaced; the

half of the upper lip pushed downward and forward ; the buccal orifice is deformed, narrowed, and almost completely obstructed by the tumour which is on the point of projecting from it. The skin of the cheek is in a state of tension, but, except for some little bluish veins which traverse it, it preserves its normal character. Inside the mouth the palatine arch is deformed, especially on the left ; the median raphé pushed to the right and obliquely backward. All the teeth of the right upper jaw have fallen out ; those of the left upper jaw have partly disappeared ; three of them can be felt projecting. The tumours are of hard consistence, cartilaginous, almost osseous. The bones of the cranium appear normal, except at the level of the middle frontal eminence, where there exists a projection. There is another tumour of the lower jaw. The whole of the body of this bone is deformed, thickened, and lumpy, except in front at the level of the medium incisors. These tumours have developed slowly and continuously ; speech and mastication, and sometimes respiration, are difficult.

Operation.—After anæsthesia, preventive hæmostasis by the aid of forceps applied to the upper lip on each side of the median line, on the alæ nasi, and the septum ; sponges pushed into the vestibule ; patient in a half-sitting position—an incision is made with the bistoury, which divides the upper lip and the nostril to its root vertically in the middle line. M. Péan then detached by dissection the soft parts of the cheek, with great care in consequence of hæmorrhage from vessels. He removed the tumour by *morcellement*, attacking the centre first, and then pursuing this piecemeal removal from the centre to the periphery. He first slices away the anterior portion of the tumour, that which lifts the upper lip and the cheek, then with the cutting gouge forceps enucleates in pieces the other portions of the tumour which occupies the soft palate, the two maxillary bones, their ascending processes, the floor of the left orbit, the pterygoid process, and the malar bones. Now there results a vast cavity which is filled with sponges which have been rendered aseptic. Some forceps are left on the most important vessels ; then the wound at the back of the nose and of the upper lip is closed, its borders being sutured with Florence hair. A dressing of iodoform gauze and sublimate is applied. The histological examination shows the tumour to be an osteo-fibroma of the maxillary bones.

Clinical Observations.—"What was interesting in this case was not so much the really extraordinary size of the tumour as the

simultaneous development of two tumours, probably of the same nature, in the two maxillary bones. As to its nature, there was no doubt as to its being solid and of uniform consistence. Its fibres of almost osseous hardness made us suppose that we had to deal with an osteo-fibroma rather than with an osteo-sarcoma. (The subsequent microscopical examination confirmed this diagnosis.) In the presence of so enormous a tumour in an important region, one might have hesitated to intervene, but as the neoplasm was growing under our eyes and as the patient was breathing with difficulty, could not take food—in a word, as death was imminent—we desired to endeavour to do something to save this young girl. We might have made a preliminary incision around the border of the *alæ nasi* and the naso-jugal furrow, as Nélaton was accustomed to do, but in this case we gave the preference to our proceeding, which consists in making an amputation incision of the lip and of the nose. As to the removal of the tumour itself, by reason of its size it would have been impossible to accomplish it without fear of hæmorrhage by the classic proceeding, that is to say, by dividing the maxillary bones and dissecting out the morbid growth at the periphery. We should have encountered efferent and afferent vessels which we should hardly have had time to compress, whilst by following the method of piecemeal enucleation we attack the tumour from the centre towards its surface, and the operation has been carried out with rapidity and with a minimum of danger.” A further operation was performed on January 5th, 1889. After anæsthesia the region of operation was washed with a solution of sublimate of 1 in 1,000. “Making an incision on the left side, from the chin to the angle and behind the maxillary bone, he exposed the lower border, the angle, and the posterior border of the jaw. The facial artery and veins, and some other vessels of less importance included in this incision of the soft parts, were immediately compressed with hæmostatic forceps. At the bottom of the wound the tumour now appears, nodulated, whitish, having a fibrous envelope resembling periosteum, and very vascular. With a slightly curved rasp, with cutting teeth, he detached this fibrous tunic from the soft parts. He now proceeded to remove rapidly by all *morcellement* the parts of the tumour thus exposed, attacking as rapidly as possible the central parts, which were promptly scooped out. Now that the tumour was reduced to its shell, it remained only to detach this on its external surface, but it was very adherent in the greater part of its

extent to the mucous membrane of the gum and the floor of the mouth, so that it was necessary to resect at different points, thus opening the way for the blood to penetrate into the mouth. To obviate this inconvenience, and to prevent blood from falling into the air-passages, sponges were used mounted on forceps; these were replaced as they became too much soiled with blood." On this side nothing remains of the maxillary bone, for the disease has extended as high as the coronoid process and the condyle, which have to be removed. M. Péan proceeded in the same fashion on the opposite side—that is to say, the same operative method was applied, and the same difficulties presented themselves. "In removing here from the soft parts in the median line the portion of the tumour corresponding to the lower border of the band, it was seen with surprise that an apparently healthy canine tooth of the second dentition was lying transversely below the capsule of the tumour."

Here, then, was evidently, as was the case in the tumour which occupied the two maxillaries, a dental anomaly probably congenital, and which perhaps had favoured the origin of the morbid growth. The tooth was sound except for a slight thickening, probably inflammatory, of the periosteum covering the apex of its root. "When the operation was completed, the whole thickness of the opposite bleeding surfaces was included in loops of silk thread passed with a mounted needle, and about two centimètres distant from each other. Now that the wound is sutured on this side, he was careful separately to close the buccal portion of the wound." In order that the tongue may not be dragged towards the superior orifice of the larynx the point of it is pierced with a silken thread, which will make it possible to draw it forward if that becomes necessary. The dressing was done with iodoform gauze and sublimate, together with an isolating layer of cotton wool, and the whole was kept in place by bandages. Thanks to these precautions, the result was union by first intention without suppuration.

Clinical Observations.—"This new operation," M. Péan observes, "performed six weeks after the ablation of the two principal maxillary bones, has been interesting from the point of view of diagnosis, prognosis, and treatment. From the point of view of diagnosis there was every reason to suppose that the nature of the inferior maxillary tumour was the same as that of the tumours before taken away. The commencement, progress, and physical

signs were the same. The masseter and pterygoid muscles partly masking the morbid mass, we had thought it was less developed in that situation than in the body of the bone ; but in the course of the operation we recognised that the neoplastic tissue was as considerable there as at the other parts. Another speciality of the diagnosis which we were unable to foresee by reason of what had occurred in respect to the superior maxillaries, was the presence of this tooth in the periosteum, which covered the lower border of the bone in the region of the chin. Doubtless some pathologists would not hesitate to say that this dental anomaly was the cause and the tumour the effect. In any case this observation is one which must be held in view and is a matter of much interest. From the point of view of prognosis, one must ask oneself not only whether the patient, already weakened, would be in a state to support so long an operation, even although lessening its hæmorrhagic character by my method of compressive hæmostasis and piecemeal enucleation, but also whether this tumour would not be, like the others, likely to recur. In order to prevent this as much as possible, we took care to leave no suspected tissue, and we were able to carry out the operation with little loss of blood ; but I cannot but express my belief that the patient would have succumbed to hæmorrhage during the operation but for these precautions. There remains the question whether the patient, deprived of her three maxillary bones, could be provided with an apparatus capable of correcting the deformity and of permitting mastication. We shall, for this purpose, have resort to dental prothesis, the progress of which has been really remarkable of late years. We shall see what it can do in such a case as this, where the surgeon has removed the three maxillary bones.”—*British Medical Journal*.

We copy the following correspondence from our contemporary, the *British Medical Journal*, as likely to interest some of our readers :—

Proposed Dental Section.

SIR,—Touching the further proposals for mixing up the dental profession with the medical, permit me a little space to state the case *au contraire*. First, why are the Americans better dentists than we are ? Because their main attention is given to their own business ; their papers and discussions are practical and *à propos* of their daily work. We humbly, contentedly, and very well

follow their lead. Most of the improvements in operative dentistry during the last fifteen years they have initiated. Here our "great men" talk about tumours, cysts, and fractures of the lower jaw—anything and everything we never see. As to hearing this Mr. Greatman or that Mr. Bigman will give a practical demonstration of what he can do that others might do likewise, how often does it occur? It would be interesting to know how many "bridge" cases and "crowns" have been made at the Dental Hospital during the last three years by the staff to demonstrate the latest methods to the students. In America, in all the depôts and announcements of meetings, one sees Mr. So-and-so will give a clinic, &c. It is so, it is only natural, the moment dental students get a smattering of medicine and surgery; the subject is so varied, deals with such important issues, that generally they cease to take any interest in such details as the shape of a drill or pivot pin. It is enough for the dentist to recognise there is something requiring attention beyond his province and refer the patient to his medical adviser. The fact is, we dentists are anxious to increase our social importance by rubbing shoulders more and more with the medical profession. That is harmless enough; but if it is done at the expense of the service we render the public in return for their fees, you should protest. My remarks should perhaps be addressed to the Dental Association Journal, but it is too unpalatable for them to listen to me, so I appeal to you to do so for our own sakes. The public in their dentist want a man who can fill, extract, and make a denture, using all available knowledge.

A dentist's curriculum should be confined strictly and wholly to these subjects; then, after passing a suitable examination, if the student has the means and inclination, let him pass on to other studies; and if, finally, he arrives at F.R.C.S. and M.D., as well as L.D.S., there would be no one more ready to admit his value to our profession than myself, knowing, of course, how the purely surgical and medical overlap the purely dental and mechanical at some points, and that no dividing line can be drawn. But because this division cannot be arbitrarily made, that is no reason why a multitude of subjects should be "scraped through," along with the absolute skill and knowledge it should be a *sine quâ non* a dentist should possess as a qualified dentist. In every student's number of our Journal the tyro is advised to run the M.R.C.S. with the L.D.S. curriculum, to save time. Bad marks for filling work can be made up by extra in surgery and medicine. What a consolation for a patient to know that though his dentist is a poor

filler, he could tell him more about the state of his liver than, perhaps, his medical adviser. Proficiency as a dentist brings no repute in the dental profession. To read a paper made up from the textbooks on, say, epithelioma, gives one more *éclat* than a paper with suggestions for improved methods of practical work. A life of practical work and writing would be of no value to render eligible a candidate to lecture or demonstrate dental mechanics in comparison to possessing the M.R.C.S.

Surely it is obvious the dental profession should strive to emphasise its own individuality in view of the eminence gained in America by so doing. Would dentistry as an art have achieved the same position there had it "hung on" to the medical and surgical profession? No. That members of the British Dental Association, with surgical and medical qualification, may usefully attend the meetings of the British Medical Association is without doubt, as also their value to their own Association. But to join the two Associations is in the direction of smothering the average dentist's interest in his own business. Pray remember Dr. Johnson said the capacity of the average brain is limited; you can only cram something in by cramming something out. I have been a dentist twenty years, and every day find I have something to learn, and more than I know, so it cannot be said that there is not scope in pure dentistry to absorb the average man.

I conclude with a general assertion, which I emphatically say is generally true, that in proportion as you interest the dentist in subjects so vast and absorbing as medicine and surgery, so he ceases to take an interest in the details of his own practical work.—I am, &c.,

WALTER WHITEHOUSE.

8, *The Sanctuary, Westminster Abbey.*

SIR,—I regret that you should have admitted to your columns, under the above heading, Mr. Whitehouse's irrelevant and altogether unwarrantable attack upon the dental institutions of this country. You will, I am sure, allow me to reply.

First, as to our societies. Whether as regards the quality of the contributions which it produces, or the character of the discussions which these excite, the Odontological Society will compare favourably with any scientific society. Every topic germane to dental practice—whether it be first principles of science or details of operative procedures—is in turn on occasion discussed. Con-

tributions of high value from non-members are also frequently received; and during my present year of presidential office, we are to have papers from such men as Bland Sutton, Jonathan Hutchinson, Felix Semon, and Ferrier. The various branches of the British Dental Association are doing similar work; and I am well within the mark in stating that the dental profession of this country, compared with that of any other, is performing more than its due share, not only in the promotion of dental science, but in the advancement of dental art in every department. For proof that such is not the case, as a rule, in American dental societies—as is alleged by Mr. Whitehouse—it is only necessary to turn to so recent an issue of the *Journal* as that of March 9th. At page 535 of that number may be found some comments on the recent testimony of a distinguished professor at Harvard with regard to the degraded condition of many American dental societies. To this I can also bear witness. It has been for many years my duty, in an editorial capacity, to examine the voluminous *Transactions* issued by American dental societies; and, although there are honourable exceptions, I have in most cases found that these publications serve only to demonstrate the members' lack of such intellectual qualifications as are usually thought indispensable in members of a profession, and their want of grasp of those fundamental facts of science upon which dentistry, not less than all surgery, has its foundation.

Whatever might have been unjustly alleged against British dental schools thirty years ago does not hold now. New generations of young practitioners have grown up, second to none in mastery of their craft; and the teaching at their hands in our schools cannot at least be excelled, if equalled, in thoroughness and efficiency, by what is afforded at American or other foreign institutions. Dental education in this country, organised by the great medical corporations, and under control of the General Medical Council, turns out dental practitioners as accomplished and fully equipped for practice as any in the world, and the British dental diploma forms a voucher of professional competency than which none is more to be relied upon. After full inquiry, the Medical Council has refused registration to all, with the bare exception of two American dental diplomas, only these being up to the standard of our dental licence. The majority of American dental colleges, if they have the will, have not the power to enforce regulations. To obtain the degree of "doctor of dental surgery" in the States need involve

no greater sacrifice than the judicious outlay of a few dollars. The British dental quack of the day, hampered as he has become by the penal clauses of the Dentists Act, has not been slow in altering his plans to suit the new conditions. On the strength of diplomas purchased in this country, or obtained on a brief visit to the States, he and his unqualified assistants now all dub themselves "doctor," and seek to evade the law by avoiding direct use of the title dentist, whilst advertising themselves. However well intentioned Mr. Whitehouse may have been, his action in writing as he has done is certainly calculated to play the game of these gentry; and, for the sake of the public as much as for the sake of the dental profession, I trust you will give a place to this protest.

I am, &c.,

HENRY SEWILL.

Wimpole Street, March 23rd.

SIR,—Some of the statements contained in Mr. Margetson's letter in your issue of March 9th are so misleading that I venture to ask you to give me space to correct them.

In the first place, I would point out that a casual glance at the list of Members of the British Medical Association shows the names of at least forty-five to fifty who are practising dental surgery instead of twenty-five, as he puts it, and I have no doubt this number would be considerably increased were a dental section formed. Probably the Ophthalmic and Aural Sections were started with a less number of specialists than this. In addition to these we should doubtless have many members of other sections dropping in to hear papers and join in the discussion from a medical point of view, and thus facts would be elicited and cases quoted showing the relation of dental lesions to medical and surgical practice, which, in a society purely dental, would never see the light, so that a lot of valuable clinical material now lost would be preserved.

In the first part of Mr. Margetson's letter we are told when the British Medical Association will welcome a dental section, and, later on, what the British Dental Association will eventually become. What authority he has for making these very definite statements I know not, but I feel convinced, from conversation with Members of the Council and others of this Association that they would willingly grant a dental section at once if the thing were properly arranged.

I am glad to find that this gentleman is the only correspondent who brings anything approaching dissension into the matter, for no other writer has even suggested that a doubly qualified man is superior in any one way to one with a single qualification ; and if, as Mr. Margetson suggests, belonging to the British Medical Association shows a want of charity to those who cannot join, why does he still continue a member? The mere formation of a dental section does not increase the sin.

No one wishes more heartily than I that the standard of dental education may be increased, as Mr. Newland-Pedley so ably suggests ; but there is no reason why the thin end of the wedge should not now be inserted, and the dental section formed, however many are afterwards allowed to join.

I am as proud to belong to the British Dental as to the British Medical Association, and am sorry to hear anyone suggest that a dental section would injure the former. I do not think it would seriously affect it, seeing that the Associations never hold their annual Meetings in the same week, and, as a rule, at great distances apart. There are many who would be able to attend one and not the other, whilst others would be seen at both.

Finally, there are several able men who, from reasons of their own, have not joined the British Dental Association, but who would work hard with others in this dental section, the formation of which would help to give a little more colouring to the assertion, so often repeated, that dental surgery is a branch of surgery, besides proving one of the strongest links between the medical and dental professions.

Apologising for the length of this letter,—I am, &c.,

Southernhay, Exeter.

J. M. ACKLAND.

Suppuration of the Antrum, secondary to Caries of a Temporary Canine Tooth.

BY R. DENISON PEDLEY, F.R.C.S. ED. (EXAM.), L.D.S.,
DENTAL SURGEON TO THE EVELINA HOSPITAL FOR SICK CHILDREN ;
ASSISTANT DENTAL SURGEON TO THE NATIONAL
DENTAL HOSPITAL.

ON May 7th, Minnie —, aged eight years, was brought to the Evelina Hospital by her mother, who gave the following history. She had suffered from inflammation of the lungs once, and three years ago she had measles, since which there had been

a continuous discharge from both ears. The present illness commenced five weeks previously with aching and swelling of the cheek. A doctor was consulted, who removed a tooth, and some matter came away from the socket at the time. A week later a lump was noticed below the left eye. The face being swollen and very red, hot fomentations were applied.

The patient was seen to be a well-nourished child, with fair hair and blue eyes, complaining of severe pain in the cheek. On examination, the face was considerably swollen on the left side, involving mostly the cheek, which was red and brawny. There was a fluctuating swelling below and external to the inner canthus of the left eye, and at its summit there was a thick yellow crust, from beneath which pus was oozing. The crust being removed, examination with a probe showed that this was in connection with the antral cavity. On inspection of the mouth, a scarcely healed wound was seen between the temporary lateral incisor and molar teeth, showing clearly that the temporary canine tooth had been removed. The hard palate on the affected side was quite normal, but viewed from outside the anterior wall of the left antrum was more prominent than the right. No fluctuation could be obtained through the antral wall. The child was placed under chloroform, and with an ordinary gimlet, previously rendered aseptic, the orifice through the canine socket was enlarged. The developing permanent canine, which was above and in front of the opening, and lying quite loose, was removed. A probe was then thrust into the antrum, and out on to the cheek. The cavity of the antrum was carefully explored at the same time, the walls appearing healthy, except anteriorly. The sinus on the cheek was dressed with boracic ointment, and a pad placed over it. The antrum was syringed out with warm boracic lotion through the perforation in the jaw. The mother was then directed to syringe it frequently with this lotion. On June 4th the sinus on the cheek was found to be quite healed. By the 18th the wound in the mouth had closed up, and for some days it had been found impossible to introduce the nozzle of the syringe.

Remarks.—Collection of pus in the antrum in childhood is of rare occurrence. Owing to its small size the roots of the temporary teeth lie well outside its walls, which are comparatively thick; and when suppuration takes place round the fang of any tooth a ready exit is found through the porous alveolar ridge into the mouth. In this case the pus from an alveolar abscess at the

root of a canine tooth had burrowed deeply beneath the permanent canine, and finding its way into the antrum, had probably pushed the mucous lining before it (there was no discharge from the nose), and then pointed through the anterior wall and out through the cheek.—*The Lancet*.

Ether as an Intoxicant.

ON Monday, March 25th, Mr. Macartney asked the Chief Secretary for Ireland whether he was aware that, at the last meeting of the Synod of the Church of Ireland, a petition was adopted praying Parliament to regulate the traffic of ether in Ireland; whether there was reason to believe that ether was used extensively as an intoxicant in certain portions of the counties of Londonderry and Tyrone; whether attention had been drawn to this by coroners, medical officers, the police, and the officials of county lunatic asylums in Ireland; and whether he would consider if anything could be done to stop this great and increasing evil.—Mr. Balfour said the petition referred to appeared to have been adopted as stated. The constabulary authorities reported, as regarded parts of Londonderry, that it was the case that ether was constantly used as an intoxicant, and the resident physician of the asylum reported that insanity in his district was produced in many instances by an indulgence in this pernicious habit, with other causes. The constabulary reported with respect to county Tyrone that the habit of ether-drinking existed in two localities, but in a limited degree. The resident physician of the asylum stated that he could not refer to any particular cases where insanity had been attributable to the habit in his district, but that such had been the case was the general opinion there.—*British Medical Journal*.

Suppuration of the Antrum of Highmore.

At the Nottingham Medico-Chirurgical Society, on Friday, March 1st, 1889, Dr. Donald Stewart described three cases in which pus was detected by syringing the antrum through the natural opening in the middle nasal meatus. Nasal polypi had been removed from one nostril in each case, chronic suppuration remaining after the operation. This was found to be due to bone disease in the deeper nasal cavities. In all three the teeth of the

affected side were sound. In one case a sound molar was drawn to facilitate drainage. There was no dilatation of the antrum in any one of the three. Dr. Stewart maintained that the suppuration had its starting place in the nose, for when the disease of the latter improved, a corresponding change was seen in the antrum. Dr. Stewart quoted Dr. Zeim, of Dantzig, who himself had suffered six years from this condition, in support of his views. Two of Dr. Stewart's patients learned to syringe the cavity through the natural opening in the middle meatus; for the third the molar tooth above mentioned was extracted, and the alveolus bored through. Dr. Stewart further described the operation of Miculicz, who opened the antrum through the inferior meatus, and gave an account of symptoms and treatment in other cases not dependent upon nasal disease.—*British Medical Journal*.

REVIEWS AND NOTICES OF BOOKS.

ANÆSTHETICS, THEIR USES AND ADMINISTRATION,
BY DUDLEY WILMOT BUXTON, M.D., B.S., M.R.C.P., M.R.C.S.,
Administrator of Anæsthetics to the University College Hospital,
the Hospital for Women, Soho Square, and the Dental Hospital
of London. H. K. Lewis, Gower Street, pp. 164.

THIS manual is an addition to the growing list of Lewis' practical series, and we have no hesitation in saying that it is likely to prove a very valuable and a very popular addition to practical medical literature. The form, and to a great extent the size, of the work must of necessity be governed by the exigencies of uniformity with its companion manuals, and criticism on this head is therefore somewhat outside the scope of the present notice. We feel, however, constrained to take this opportunity of saying a few words concerning small manuals in general before discussing this one in particular. It is the fashion with a certain class of reviewers to discuss small manuals from a very prejudiced standpoint. It seems to be assumed by the reviewers that a small book that will easily go into the pocket must of necessity be inadequate and scamped, the ugly name "cram-book" is hurled without discrimination at all attempts at condensation and brevity, while tedious and long spun-out masses of verbiage often receive reverence in

proportion to their bulk. Perhaps a ready explanation of this tendency lies in the tempting simplicity of the test of size as a measure of merit, a reviewer who might fail to appreciate finer distinctions can always count the pages of a book ; some of the most valuable contributions to our literature are the reverse of bulky, and some of the most useless and untrustworthy are imposingly huge, and there are few sillier outcries than that which denounces all small manuals as mischievous by reason of their smallness.

Dr. Buxton contrives in his excellent little book to convey in 164 pages of readable type an immense amount of valuable information on the subject of anæsthetics. The style is clear and unaffected, the author is practically and theoretically thoroughly acquainted with the subject in all its branches and qualified to speak with authority.

The first chapter is historical and gives a brief *résumé* of advances in the science up to the present time. The author then discusses the preliminary steps that tend to ensure the best results, the proper preparation of the patient and the considerations which should guide the administrator in the choice of the most suitable anæsthetic. In a large proportion of dental practice, where nitrous oxide is the agent employed, we are not in the habit of paying much attention to previous preparation, but in operative surgery generally the subject is of great importance. With regard to the best time for giving anæsthetics, Dr. Buxton lays down the usual rules with this exception, that he does not approve of administering after a prolonged fast, for instance before breakfast, a time which has been usually regarded as especially favourable because it combines the advantages of an empty stomach with the refreshed and rehabilitated condition of mind and body consequent upon a good night's rest, and last not least, because it does not allow any opportunity for a long period of nervous apprehension.

After indicating the considerations influencing the choice of anæsthetics, Dr. Buxton discusses in order nitrous oxide, ether and chloroform, devoting a chapter to each. The less known anæsthetics are then discussed, and lastly the mixtures, and this part of the book, it may be noticed in passing, contains a great deal of interesting observation and information not to be found elsewhere. The next two chapters are devoted to the special points of interest arising in connection with anæsthesia in obstetric practice, and operations involving the brain, eye, mouth, abdomen, and intestinal

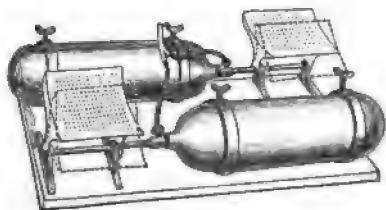
tract. The "accidents" are next treated and then follows local anæsthesia, a most interesting chapter dealing with all the principal local agents from cocaine downwards. With regard to the latter drug Dr. Buxton summarises briefly and impartially its uses and abuses, and his conclusion is that the weight of opinion is unfavourable to its use in extractions, on the ground that "small doses are inadequate, and larger ones too frequently give rise to constitutional derangement." The last chapter of the book touches very lightly upon the medico-legal points of interest with regard to anæsthetics.

Regarding the book as a whole, we have no difficulty in pronouncing it good, useful, and eminently practical.

NEW INVENTION.

A New Gas Apparatus.

For practitioners or anæsthetists who use gas from the bottles without a reservoir, it is necessary to have some arrangement whereby a second bottle may be brought into use at any moment, when the first shall be exhausted. For this purpose some use a union connecting the two bottles with the bag and face-piece, with a round roughened foot-piece to be moved in a horizontal direction with the foot when releasing the gas. In this arrangement, and any modification of it, it is necessary to open the first bottle with a key, and then, if necessary at a later stage, the reserve bottle. This latter proceeding, especially if the bottle be a "tight" one, may result in much loss of time and inconvenience at a critical moment during the anæsthetisation (or production of anæsthesia). The illustration shows an arrangement of bottles



upon a stand in which the pedal-piece is moved in a vertical or "to-and-fro" direction, and being in connection with a spindle

directly applied to the nipple of the bottle, not only "turns on" the supply of gas, but controls its escape. It is claimed that if the bottle is properly placed in relation with the spindle in the first place, the "to-and-fro" movement of the pedal-piece will suffice to empty it without further adjustment, and in the case of the first bottle being exhausted, the pedal-piece is easily adjusted to a similar spindle on the second bottle and is at once in working order. This apparatus has been tried by several gentlemen at the National Dental Hospital, who report favourably upon it. It may be seen at the depôt of the Dental Manufacturing Company, Lexington Street, Golden Square, W.

ANNOTATIONS.

WE trust that those of our members who have made microscopical science a favourite study will support the efforts that are being made by our Brighton friends to arrange a really good exhibition.

THE term "Patent Medicines" is an accepted misnomer, technically, but illogically, applied to a proprietary nostrum bearing a revenue stamp. This is doubly misleading, because, firstly and broadly, instead of being patent or open, the nature of the preparation is not only a profound and jealous secret but often varies from time to time; and secondly, because, although entirely outside of the Patent Law, it is frequently confounded with a legally patented article. A further grave objection to this method of retail drug distribution is that the covering Government stamp, although itself plainly proclaiming the contrary, is undeniably regarded by the ignorant and thoughtless as an official guarantee of some sort. Therefore, however unjustifiable in ethics may be a legal monopoly for profit in a useful invention, it is undeniable that in view of the wide dissemination of agencies so potent for good or evil, the fully patented article, protected by and amenable to a wise law, is vastly less harmful than the inscrutable mystery masquerading under a grand quack title. Our patent laws require an invention to be fully set forth and clearly defined. The professional employment or prescription of anything duly patented is therefore perfectly justifiable; and although

free and full publication without such restrictions on use or sale deserves the highest public encouragement and the moral support of the profession, yet so long as inventors, manufacturers, or dealers require, and are accorded, a measure of protection—presumably for the public benefit—the really patented article must be favourably distinguished from the so-called “patent medicine.”

WE desire to point out, however, that already unscrupulous or very ignorant dealers in remedies and materials largely used by surgical and dental practitioners attempt to take advantage of the favour a valid patent would confer upon their wares, while evading the conditions of full disclosure imposed upon them. The particulars of a patent applied for are kept secret for a period of ten months, which may be extended to a year. During this time the invention may be publicly used and sold, but, until the full specification is published, to describe or mark it as “Patent” or “Patented” is a penal offence under the statute law. Several instances have been brought to our notice in which bold advertisements of So and So’s Patent Thingamy, No. —, Dated such and such, &c., was calculated to convey a distinct impression that the article named was of a definite and easily ascertainable composition—the so-called “Patent,” however, being merely an “application” opportunely abandoned. Deliberate misrepresentation in a specification, undoubtedly practised occasionally, is less likely to be resorted to under a patent thereby invalidated, than in reference to an unprotected article—at least, by anyone with a reputation to lose. It is clearly a professional and public duty to beware of fraudulent “Patents” which are not patent, of unknowable “Specialities,” or of “celebrated” mysteries, the use or toleration of which is certainly not even an enlightened or scientific empiricism.

ON another page will be found the report of the case of Phillips *versus* Cottam. It is worthy of careful perusal, for no dental practitioner can fail to take an interest in actions for malpraxis: the present case acquires special interest from the fact that Mr. Cottam was so obviously not liable to the charges brought against him that the learned judge decided, after hearing the plaintiff’s case, that there was no case to go to a jury; that the plaintiff’s

own evidence did not show any want of skill on the part of the dentist ; that it was unnecessary to hear the defence ; and that he should order a non-suit with costs of conference fee. The complete vindication of Mr. Cottam, who is a respected member of our Association, was of course all that could be desired ; there are, however, some points in connection with the charge which are curious and instructive. The patient had a tooth extracted, and was apparently subsequently troubled with hæmorrhage ; instead of going back to the dentist, or sending for his help if too ill to go to him, she called in a doctor. This doctor does not seem to have appealed to the practitioner who extracted the tooth, or even to have advised him of the condition of affairs, but proceeded to make a discovery which will astonish most of our readers, namely, that the bleeding, which was serious enough to interfere with the patient's health, came, not from the socket, but from the *torn edges of the gum* which had been injured by the forceps. It did not yield to perchloride of iron, plugging the socket, or to any other measures for a day and a half (the doctor was unable to remember whether he had used ice) ; none of the ordinary styptics were so much as mentioned. Four months afterwards this medical man, who is an L.R.C.P., L.R.C.S. Edin., appeared as a witness in the action for damages, which happily fell through. We have no space for further comment ; those of our readers who take an interest in etiquette or in the treatment of hæmorrhage, had better read the verbatim report which we print elsewhere.

THE meeting of the Odontological Society, a report of which we publish in the present number of the Journal, presented many interesting features. The scientific reputation which Mr. Jonathan Hutchinson has won for himself may fairly be described as world-wide. Moreover, if we except perhaps Mr. Christopher Heath, there is hardly any great name in surgery that is so familiar to the student and practitioner of dentistry as that of the reader of the paper of the evening. In the pursuit of his classical investigations into the nature of syphilis, Mr. Jonathan Hutchinson has contributed enormously to dental pathology, and has enriched the literature of our speciality as he has enriched every branch of science that he has touched. It is all the more remarkable that so clear-minded and practised an observer should have been drawn into making such a singular

statement, as that to which he gave expression concerning the supposed mischievous effects upon adjacent soft tissues produced by amalgam fillings. From the President downwards, almost all the dental speakers expressed their dissent from the view promulgated in the paper, and although, as Mr. Pedley pointed out, a rough edge of amalgam may cause an irritable sore on the tongue, so may any other rough edge. We think we shall be expressing the opinion of all our members when we state it to be our belief that amalgam properly finished off is as harmless in this respect as any other material. If, however, any of our members think otherwise, our correspondence columns are open for the ventilation of their views and the recording of their evidence.

WE have received a little pamphlet, entitled "Remarks on the Dentists Act, by a licentiate in dental surgery and member of the British Dental Association." It contains in a very condensed form a good deal of information about the Act and the manner in which advertisers endeavour to evade it, together with some pertinent remarks about the various shifts to which the unqualified practitioner is obliged to descend in order to persuade the gullible public that he possesses a diploma. It cannot do anything but good to ventilate these matters in quarters where they are not understood.

STATEMENT of operations performed at the National Dental Hospital during March.

Number of patients attended	...	...	...	2072
Extractions :				
Children under 14	...	...	...	261
Adults	...	...	...	473
Under Nitrous Oxide	...	...	...	815
Gold Stoppings	...	...	...	152
Other Stoppings	...	...	...	528
Advice and Scaling	...	...	...	585
Irregularities of the Teeth	...	...	...	122
Miscellaneous	...	...	...	172

Total ... 3088

E. C. FISK, }
R. S. FARO, } *House Surgeons.*

STATEMENT of operations performed at the Dental Hospital of London, Leicester Square, during March.

Extractions :

Adults	...	...	...	...	...	939
Under 14	...	...	...	...	...	413
Gas	...	...	...	...	...	1021

Fillings :

Gold	...	...	...	...	...	454
Plastics	...	...	...	...	...	1273
Dressings and Miscellaneous	...	...	...	...	...	412
Advice	...	...	...	...	...	154
Regulations	...	...	...	...	...	147

Total ... 4813

T. E. CONSTANT,
J. PERCY SMITH,
A. HOPEWELL SMITH. } *House Surgeons.*

WORK done at the Victoria Dental Hospital of Manchester, during February and March.

			Feb., 1889.	March, 1889.
Number of patients attended	...	...	908	986
Extractions :				
Children under 14	}			
Adults		...	660	664
Under Nitrous Oxide		...	101	141
Gold Stoppings	...	...	60	58
Other Stoppings	...	...	85	137
Miscellaneous	...	...	235	275
Total	...	...	1141	1275

PERCY A. LINNELL, L.D.S. Eng., *House Surgeon.*

STATEMENTS of operations performed at the Birmingham Dental Hospital, 71, Newhall Street, during March.

Number of patients treated	...	...	...	...	474
Males	...	...	...	...	136
Females	...	...	...	...	183
Children under ten years of age	...	...	...	...	155

The operations were as follow :—

Extractions...	...	...	...	...	399
Gold Fillings	...	...	...	...	8
Other Fillings	152
Miscellaneous and Advice...	105
Anæsthetics	38

Total	702
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THE next examination for the Licentiatehip in Dental Surgery of the Royal College of Surgeons of England, will be held on the 6th, 7th, and 8th of May.

ROYAL COLLEGE OF SURGEONS IN IRELAND. DENTAL EXAMINATION. — The following gentlemen have been admitted Licentiates in Dental Surgery of the College, viz.:—John Charters Birch (Leeds), Victor Massey Crosse (Angers, France), Henry Williams Messenger (London), John George Wallis (Hull) and Walter Williams (Eastbourne).

THE Annual Meeting of the Odonto-Chirurgical Society will be held in the rooms, No. 5, Lauriston Lane, on Friday, the 3rd May, at two o'clock, Dr. Williamson (Aberdeen) in the chair. It is to be hoped that there will be a specially good attendance at this meeting, owing to the interesting associations connected with it. Members of the British Dental Association, whether connected with the Society or not, will be welcome and are hereby invited.

THE Annual Dinner of the Odonto-Chirurgical Society and Licentiates in Dental Surgery will this year be held on May 3rd in the Balmoral Hotel, Prince's Street, Edinburgh, Sir Douglas MacLagan in the chair.

THE date of the dinner has been postponed in order to inaugurate the opening of the new premises of the Edinburgh Dental Hospital and School.

THERE will be a series of interesting demonstrations in the Hospital on the morning of Saturday, the 4th prox., which should make the meeting peculiarly attractive to visitors.

THE various departments of the Hospital have been fitted up with many of the latest improvements, which will make it one of the best teaching institutions in the kingdom. The stopping room, which is commodious, is heated with hot-water pipes, and is principally lighted from the roof. It is furnished with Ash's swing chairs and Morrison chairs, saliva ejectors, and burring engines, several of which are driven by motor power and fitted with bracket arms.

A RETIRING room is specially set aside for students, on the table of which will be found a selection of professional journals and books of reference.

A LABORATORY has been fitted up, which will afford every facility for making continuous gum work, regulation cases, bridge work, and pivot cases.

THE Fifth Annual Dinner of the Edinburgh Dental Students' Society was held in the Albert Hotel, Edinburgh, on the evening of March 20th, Mr. W. Bowman Macleod, L.D.S., in the chair, Mr. James Graham Munro, L.D.S., vice-chairman. Drs. Johnson, Symington and Drinkwater, and Messrs. G. Stewart Durward and G. S. Amooore were amongst the guests. The meeting was highly successful.

WE record this month the death of a member of our profession who was born when Louis XVI. was still on the throne of France, when William Pitt was prime minister of England, nine years before the Act of Union between Great Britain and Ireland. Nelson was thirty-three years old and almost unknown, Wellington was only twenty-two and Walter Scott eleven. Mr. Hogue must have seen some startling changes in his long life.

THE cases for binding the Association Journal are now ready, and will, we imagine, prove a great convenience to members who wish to bind up their Journals. It is got up in dark green cloth, with green leather bands at the back, with the name of the Journal, the date and the volume in gold letters upon the bands. The case is made sufficiently large to take the twelve numbers of the Journal and the *Transactions*. It can also be utilized as a reading case for the loose Journals if desired ; but gentlemen requiring them for this purpose should mention this when ordering them.

WE shall exhibit specimens of these covers at our Annual Meeting for the inspection of members, and we have little doubt that they will be fully appreciated. The cases can be obtained of Messrs. Bale & Sons, 87-89, Great Titchfield Street, W., for one shilling and sixpence each, or they will bind the parts for two shillings and sixpence each ; carriage paid three shillings.

THERE are still some copies of the pamphlet on "Quackery" on hand. It has gone through two editions, and the third is nearly disposed of. This fact speaks for itself and sufficiently shows that there are a large number of gentlemen who find in its pages the expression of their own convictions.

THE REGISTER.—We cannot impress too strongly upon all readers, that the half of the inquiry forms to be returned *must bear a penny stamp*, otherwise double postage is charged on delivery, and a considerable waste of money is the result, and it is the rapidly diminishing Dental Fund that has to bear the loss. Although the Registrar can send out his forms for a half-penny, the return form must be stamped with a penny stamp.

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our Correspondents.

August Meeting—Microscopic Section.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—Will you kindly make known to the members of the Association through our Journal, that I shall be glad to receive microscopic slides for the Annual Meeting ; the subjects we desire to illus-

trate are *Exostosis, Erosion, Tooth Formation and Pulp Calcification*, human or otherwise. All slides to be sent to my address as early as possible, that they may be classified and entered in the catalogue.

The greatest care will be taken of the slides, and *all* will be returned within one month of the date of the meeting, or members visiting Brighton for the Meeting can have their slides returned after 2 p.m. on Saturday, August 24th, 1889, by giving notice in *writing* to the secretary of the section.

Faithfully yours,

DOUGLAS S. CAUSH,
Hon. Sec. Microscopic Section.

63, *Grand Parade, Brighton.*

The Dublin Museum.—Lost.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—Will you kindly grant me space to ask if any of those who exhibited at the above museum have received by mistake a small green shark-skin microscope box, a little hollow ivory handle with brass X screw at the end, an old pair of forceps, and three trifanged lower molars, and if they have, if they will be so good as to return them to the undersigned. I may say they cannot be found in Dublin, and it is quite possible that in the hurry of returning so many exhibits they may have been misplaced.

I am, Sir, yours faithfully,

HENRY BLANDY.

1, *Postern Street, Nottingham.*

Bye-Paths of Quackery.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—It is right that Mr. Renshaw and members who, like him, are devoting so much thought and time to promotion of our objects, should be made aware how thoroughly appreciated are their labours by the Association generally. It is to be hoped that Mr. Renshaw's sensible remarks may be widely read and may bear fruit. If every individual member would keep on pegging away, driving facts into the stubborn or selfish heads of eligible men who still hold aloof from our organisation, we should soon see a more rapid increase in our numbers. Numbers give us both more authority and more money to deal with pressing questions, for although we are getting on very well there is still much to be done. It is easy, not only to show anyone who is open to reason the necessity of our Association, but to make him see what benefit to immediate personal interests it is directly and indirectly conferring upon every respectable dentist. Without our Association the Dentists Act must virtually remain a dead letter, for there exists

no other public body having at once the power and the will to enforce the law, and it is evident no private practitioner could successfully perform the function.

To instance what is being done : can anyone estimate the far-reaching beneficial influence of a prosecution such as that reported in your present issue? That case will be read throughout the length and breadth of Scotland. Its first effect must be to deter unqualified practitioners from violating the law ; its second and greater effect to enlighten a great mass of public opinion, and to make a vast number of sensible people, who had not realised the fact, aware of the existence of a *dental profession*, and to show them that it is necessary in the choice of a dentist to be as careful as in the selection of an adviser in any other profession. In every branch and department of the medical profession irregular practice and quackery exist, and to a greater extent than in ours. This has been over and over again shown in your columns, and has, within the last few weeks, been exposed in a lengthy correspondence and in editorial comments in the *Lancet*. In our department, although much is being done, progress must be slow so long as the bulk of those for whose benefit legislation has been achieved will not make so much sacrifice as is involved in giving their moral support and paying a trifling subscription to our Association.

I am, Sir, yours truly,
AN EX-OFFICER.

Metal Cap Crowns.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—I must ask permission to differ from Mr. Mitchell in some of the assertions made in his paper on this subject—"Any crown made to fit a model will not fit the tooth perfectly." If the impression is taken with rather hard compo the gum is slightly pushed down and the margin of stump left quite clear, the gum on model can be pared away to get the required depth, and the stump slightly scraped round to get the required tightness. Let the band be made of No. 4 plate, eighteen or twenty carat—a quality of which I have always succeeded in getting good enough at the depôts without the trouble of rolling sovereigns. The thinner the gold used to make the bands the greater the possibility of its self-adaptation in forcing it on the root ; I therefore reverse Mr. Mitchell's order and use No. 4 for the band and No. 5 for the crown, as I contend the band has less wear than the crown. Where there are any concavities on the sides of a root before the final adjustment it is necessary to bend in, in an exaggerated manner ; the driving home will draw it out again, yet leave a perfect adjustment at depth of concavity. As a rule the crown of the root we are treating has been lost so long there is usually some abnormality of bite, and to avoid trouble, get a perfect articula-

tion and permit as much work as possible being done in the workroom, it is better to take an upper and lower impression and build the band up with wax, take a mould with clay and make dies (bismuth and lead metal). With some compo at hand rolled very thin and softened with dry heat to take the impressions, using No. 0 size of Ash's side trays is the work only of five minutes, and the dies can be made in a quarter of an hour.

During the last twelve months I have not filled six molars or bicuspid, where the cavities have been any size, otherwise than by making a cap to fit the cavity and cementing it on. I have a stock of caps always at hand that are usually available, struck from dies made from the side and part of the crown of natural teeth, and the more my experience grows the more I am pleased with this method of filling.

I am glad to acknowledge I have gathered several valuable hints from Mr. Mitchell's paper, notably the contouring pliers and band holder.

WALTER WHITEHOUSE.

Phillips v. Cottam.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—Allow me to draw the attention of our readers to a very important decision given by his Honour, Judge Rogers, in the County Court, Oswestry, on March 16th last, in the case of Harriett Jane Phillips v. Cottam & Sons, dentists, a digest of which case, as reported, I hope you will be able to find space for in the columns of our Journal. The claim was for damages, £25, for alleged injuries caused by the unskilful extraction of a tooth. His Honour at once detected the weakness of the case. His remarks on the cross-examination of the medical gentleman who was called in support of the plaintiff call for our special praise, pointing as they do in the support of the contention that in all cases of excessive or secondary hæmorrhage caused by the extraction of teeth, our medical friends should if practicable, when consulted thereon, refer the patient again to the dental surgeon, who is best able to take effective measures for its suppression:

Chester, March, 1889.

M. JOHNSON.

Apprenticeship.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—According to the curriculum a student is bound as pupil to a dentist for three years. Is that time to be spent entirely in the workroom learning the mechanical department, or is the dentist bound to

or expected to have the pupil occasionally in the operating room for instruction there also? "VERAX."

[The dentist is not bound or expected to have the pupil in the surgery unless there is a stipulation to that effect in the agreement.—*ED. J.B.D.A.*]

OBITUARY.

Mr. Robert Hogue, Edinburgh.

THE announcement of the death of this venerable dentist, which took place on the 1st of April at the patriarchal age of ninety-seven, will be received with regret by many of his professional brethren, although those to whom he was best known have long passed away.

He began his dental career when schools of dentistry were unknown, by studying for a short period with his uncle who was a dentist in Berners Street, Cavendish Square, London.

It is not too much to say that he was a "born dentist;" to a wonderful deftness of hand and lightness of touch were added unusual power of invention.

His artificial work in bone and subsequently in gold has probably never been excelled.

He made porcelain teeth about the year 1830, grinding down the minerals and experimenting for most of his knowledge and helped by the use of French works on the manufacture of porcelain. No stronger teeth than his have ever been produced. We believe that he was the first in Scotland to recognise the value of and use vulcanite as a base for artificial dentures.

In the treatment of decayed teeth he was very skilful and used gold on the cohesive principle about the year 1850, many years before Arthur of Philadelphia laid claim to the discovery.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

Subscriptions to the Treasurer, 40, Leicester Square.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE.—All communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

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A
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The Annual Museum at Brighton.

It is with great regret that we learn that the success of the Annual Museum of 1889 is in jeopardy. The invitations to contribute specimens are producing very unsatisfactory replies, and members are afraid to lend specimens which they value, because last year some of the specimens lent were injured or lost. We can fully understand that a contributor who has lost some valued specimen, or who has received it back in a damaged condition, may very reasonably dread a repetition of the same experience—much as a burnt child dreads the fire; but it is our desire to place before our readers certain considerations that may lead them on reflection to dismiss these fears as groundless.

In the first place there is no kind of parallel between the two exhibitions. The Dublin Museum was done upon a very large and splendid scale, whereas the Brighton com-

mittee have decided to reduce the forthcoming exhibition within very modest limits ; it will, therefore, be a comparatively easy task to look after and return the specimens without mishaps.

Secondly, the Dublin Museum was the *first* great effort of the kind, and every one voted it a most gratifying success ; but however able and untiring the promoters of a scheme may be, there are always unforeseen difficulties surrounding the first performance that are simplified by familiarity, and do not reappear at every repetition. We learn by experience, and, as a matter of fact, it is the very thing that goes wrong one year that is most safe to go right the next because everyone is thinking about it, and special care is sure to be taken over it. The promoters and organisers of the Annual Museum of last year are doing all they can to assist their successors, as will be seen from the excellent paper which we publish from the pen of Mr. Pearsall, in which he describes the details of mounting specimens, so that each exhibitor will be able to do this part of the business for himself. Mr. Pearsall has, in order to assist the work at Brighton, visited his colleagues there and given them the advantage of his advice and experience. Moreover, the hon. secretary of this department is fully alive to the importance of his duties, as may be seen by his letter which we published in our last issue. We feel confident that there will be neither error nor delay in returning the specimens, and we sincerely trust that there will be no further hesitation on the part of exhibitors.

ASSOCIATION INTELLIGENCE.

Representative Board Meeting.

A MEETING of the Representative Board was held on Saturday, May 4th, Mr. J. SMITH TURNER in the chair, when the following members were present: Messrs. Storer Bennett, F. Canton, W. Coffin, W. Hern, S. J. Hutchinson, L. Matheson, G. W. Parkinson, C. S. Tomes, Felix Weiss, C. West, E. Lloyd Williams, A. J. Woodhouse (London), J. H. Redman (Brighton), G. Cunningham (Cambridge), S. L. Rymer (Croydon), W. Booth Pearsall (Dublin), H. Blandy (Nottingham), T. E. King (York), and the Hon. Secretary.

Letters of regret were read from Messrs. Hughes, Humphreys, Hunt, McLeod, and Rees Price.

The report of the Sub-committee to consider the question relating to papers at the Annual Meeting (see page 134, March, 1889), was adopted, with the following addition that after the word "shall" in paragraph 2, second line, the words "in all cases" be inserted: and it was decided that the Publishing Committee be given full powers to elect the ten referees referred to in the report.

THE HON. SECRETARY stated that he had been in communication with the Registrar and the President of the General Medical Council in regard to those gentlemen who, while holding the dental qualification, were not on the Dentists' Register; and also with regard to those who had been placed on the Register under Clause 37. With regard to the former, he was able to state that most of them were now on the Register; but that some few, who also held a medical or surgical diploma, refused to place themselves on the Dentists' Register—they already being on the Medical Register. With regard to the registrations under Clause 37, he said that the President of the Council had only allowed those to be registered who, in applying for registration, had forwarded statutory declarations from themselves and their employer, that the requirements of Clause 37 had been fulfilled, and that in the event of any real evidence being forthcoming as to any of these candidates having made false declarations, the Council would place their papers, with all facts concerning their registration, in the hands of the Association; but that something more than the mere word of any individual member was necessary before any such course could be adopted.

The Hon. Secretary further said he had made a list of all those who had been admitted to the Register under Clause 37 since 1881, and that during 1888 twenty-two such cases had been registered, and that such list was at the disposal of any member of the Board.

In answer to Mr. Tomes, the HON. SECRETARY stated that no communication had been received from the West of Scotland Branch with regard to the last clause in the resolution sent by that Branch to the last Board Meeting (see page 134). In the absence of the secretaries of the Scotch Branches no discussion was raised upon the matter.

MR. REDMAN made a very promising statement with regard to the Annual Meeting at Brighton.

A vote of thanks was accorded to Mr. Pearsall for an album presented by him containing copies of all the printed matter, &c., used in connection with the Annual Meeting in Dublin.

MR. PEARSALL then moved *seratim* the four resolutions of which he had given notice; to the first the following amendment was moved and carried:—

“That the business referred to in Mr. Pearsall’s first resolution be left in the hands of the executive officers of the Annual General Meeting.”

Mr. Pearsall withdrew his resolution.

After some discussion Mr. Pearsall withdrew his second resolution.

It having been ruled that the Board had no jurisdiction in matters relating to the Benevolent Fund, Mr. Pearsall withdrew his third resolution.

The feeling of the meeting being distinctly antagonistic to the fourth resolution, Mr. Pearsall withdrew it.

Attention having been called to a circular letter sent by Mr. Pearsall to some members of the Board and also to some members of the Association, with regard to the resolutions he intended to propose, Mr. Pearsall, at the request of the Board, withdrew it.

The Business Committee having sent up the following resolution it was considered and adopted:—

“That it be recommended that the Business Committee, in addition to the *ex-officio* members, shall consist of nine members of the Association, of whom three shall retire in rotation each year, and be eligible for re-election. That this election shall be held at the first meeting of the Representative Board after the-

Annual Meeting, and any vacancies which may from time to time occur shall be filled by the Board."

It was further decided that the President of the Representative Board, the Treasurer, the Hon. Secretary of the Association and the Hon. Secretaries of Branches be the *ex-officio* members, and that those words be added to the recommendation.

The HON. SECRETARY read the opinion of Mr. Poland, Q.C., the eminent criminal counsel, with regard to several cases of alleged infringement of the Act—such opinion to be at the service of members of the Association when required. The opinion was a very valuable one, and dealt with cases where the title dentist was not used by unregistered practitioners, and with other ingenious methods of evading the Act.

The Hon. Secretary reported that the practitioners of Halifax had prosecuted a Mr. Jackson of that town and that he had been fined £5 and costs, or one month's imprisonment. The Board decided that the expenses incurred in this case should be defrayed by the Association.

The Hon. Secretary reported that he had been able to obtain conclusive evidence connecting a licentiate in dental surgery with a co-operative dental surgery, and that such evidence had been forwarded to the authorities who had conferred the diploma.

Several cases of irregular practice were referred to and dealt with.

Some cases reported by the Irish Branch, of registration under Clause 37, were considered and held over for further evidence.

A tentative invitation from the Western Counties Branch was read, and it was decided to consider the invitation when finally offered.

Mr. CUNNINGHAM made a statement with regard to the French Dental Congress to be held in Paris.

Notice of motion was given: "That the minutes be searched for all standing orders, and that they be printed as such at the end of the Bye-laws."

The HON. SECRETARY reported the deaths of Mr. Jewitt, of Liverpool, and Dr. Langmore, the late sub-editor of the Journal, and votes of sympathy and condolence were passed in each case.

The resignation of Mr. Lyddon, of Guernsey, was accepted with regret.

Mr. Samuel Brown, of Gateshead, was elected a member of the Association.

Irish Branch.

QUARTERLY MEETING IN DUBLIN.

ON Saturday afternoon, April 27th, the second quarterly meeting for 1889 was held in the Board Room of the Royal College of Surgeons in Ireland, the President of the Branch, R. H. MOORE, F.R.C.S., in the chair.

The minutes of the previous meeting having been read and confirmed,

The HONORARY SECRETARY read a letter of apology from Dr. Stack expressing his very great regret that he was unable to be present at the meeting and read his promised paper on "Dilacerated Teeth," and that nothing but the most urgent call of duty elsewhere would have seemed to him a sufficient excuse for the non-fulfilment of his engagement at the Branch meeting.

The President of the British Dental Association, DANIEL CORBETT, M.R.C.S., in an eloquent and brief address, asked the President of the Irish Branch to take advantage of the favourable opportunity that offered, before the business proper of the meeting began, to present to the Honorary Secretary of the Branch, on behalf of the Irish Reception Committee, a token of regard for the unwavering devotion, indefatigable zeal, and fertility of invention he displayed in organising the details of the Annual General Meeting of the British Dental Association in Dublin. He hoped that W. Booth Pearsall would be spared to see his children's children look upon this little gift with pride, as coming from members of his own profession, who could fully appreciate the splendid services the Hon. Sec. had given to his profession by the thorough organisation of the Annual Meeting and the great interest created in it by means of the famous temporary museum last August in Dublin; and he took the greatest pleasure in being the mouth-piece of his fellow-members of the Irish Reception Committee on that occasion.

The President of the Irish Branch, R. H. MOORE, F.R.C.S., on behalf of the Irish Reception Committee, asked the Honorary Secretary to accept from his hands a massive *repoussé* silver tankard bearing the following inscription: "Presented to W. Booth Pearsall, F.R.C.S., Hon. Sec. Irish Branch British Dental Association, by his fellow members of the Reception Committee, as a small token of their appreciation of the indefatigable zeal which

brought to a brilliant and successful issue the Annual Meeting of the British Dental Association in Dublin, August, 1888."

The HONORARY SECRETARY, in returning thanks to the President and Members of the Branch, said such generous kindness on the part of his fellow members had taken him completely by surprise, for he had no idea that the arduous labours of the past year had drawn them together in such close union. He should always value most highly the goodwill of the Irish Branch, coming, as it did, from a body of men engaged in the duties of his own profession. A token of generous and appreciative professional feeling, such as they had shewn to him, was the highest possible compliment that could be paid to anyone, and he trusted that he would be found not unworthy of it in the future, as they had considered he was in the present.

The PRESIDENT of the Branch read his inaugural address on "Dental Caries as a Result of Inflammation of the Dentine."

The HONORARY SECRETARY read a communication from R. P. LENNOX, of Cambridge, member of the Eastern Counties Branch, on "An Improved Method of Crowning Roots," which was accompanied by some beautifully made crowns to illustrate the points he wished to call attention to.

A discussion followed, in which several members joined.

DANIEL CORBETT, junr., moved, and G. M. P. MURRAY seconded, "That the thanks of the Branch be given to Mr. Lennox for his kind communication and the examples of crowns he has been so kind as to present to the Museum," which having been put by the President, was carried unanimously.

G. F. HARE, L.D.S., Limerick, exhibited a lower jaw dug out of a bog, near Knocklong, eight feet from the surface, during some drainage operations. The cusps of the teeth were quite worn away, and the dentino-enamel surfaces were wonderfully polished, while the places of attachment of the muscles were strongly marked.

P. O'MEEHAN, L.D.S., Limerick, exhibited an oblique-rooted, twelve year lower molar, extracted from the mouth of a male patient, but which did not offer any unusual difficulty in removal.

The PRESIDENT exhibited a lower molar, fractured during mastication, and extracted from a female patient aged forty-two.

The HONORARY SECRETARY exhibited and described a new method of articulating plaster casts for the purposes of record or

study of cases of irregular dentition or irregular articulation with wire articulators.

The printed abstract of the dentists registered under the Act as practising in Ireland, made from the Register of 1889 by the direction of the Council of the Branch, was distributed amongst the members present, and will be sent out by post to the members who were absent.

It was announced that the Annual Meeting of the Branch would be held in July, and the members were requested to announce beforehand the nature of the papers or objects of professional interest they may wish to bring forward, and it is not unlikely that some demonstrations in the Dental Hospital of Ireland will be organised for the occasion.

Western Counties Branch.

THE April Meeting of the Council of this Branch was held at the Royal Hotel, Weston-super-Mare, on Saturday, April 27th, the President, Mr. F. H. BALKWILL, in the chair.

Mr. W. R. Ackland, 5, Rodney Place, Clifton, was elected a member of the Association and Branch; Mr. F. H. Colwill, 5, Northfield Place, Ilfracombe, a member of the Branch; and Mr. A. Cronin, of Harley Street, an honorary member of the Branch.

This being the first meeting since the death of Mr. W. V. Moore, who was Hon. Secretary from the formation of this portion of the Association as the Western Counties Dental Association in April, 1879, till 1883, the Council ordered an expression of their regret at his loss to be entered on the minutes, and warmly approved the announcement of the President, that he had sent a letter of condolence in the name of the Branch to Mrs. Moore.

The annual meeting at Cardiff was fixed for Friday and Saturday, July 26th and 27th. The President-elect, Mr. J. C. Oliver, 121, Queen Street, Cardiff, or the Hon. Secretary, will be glad to receive promises of papers or demonstrations.

A suggestion made by Mr. Booth Pearsall of the Irish Branch that a box should be provided at each meeting for the reception of contributions to the Benevolent Fund was approved.

A long discussion took place as to the advisability of holding more frequent meetings of the members, and it was decided to recommend to the Annual Meeting that after each meeting of the

Council held between the general meetings of the Branch, an informal meeting be held for the discussion of professional matters, at which all the members be asked to attend.

Midland Branch.

THE Annual Meeting of this Branch (particulars of which were given in our last), will take place in Liverpool on the 17th inst., when it is expected there will be a large attendance. A very full programme has been provided, and the meeting promises to be unusually interesting and profitable.

The Annual Meeting of the Central Counties Branch.

THE Annual Meeting will be held at Newark-on-Trent on Saturday, June 22nd, Mr. R. F. H. King, the President-elect, having extended a cordial invitation for the Branch to visit Newark.

As the meeting is held so shortly before the Annual General Meeting of the Association at Brighton, it is intended to partake more of a social gathering and less of a business character, and therefore ladies are especially invited to be present.

The programme will include a visit to Messrs. Cafferata's plaster works, the largest in the country, and the process of manufacture will be explained by one of the principals.

Mr. King has most kindly invited the members of the party to luncheon, after which they will be conveyed in his house-boat *Bijou* ten miles up the Trent to Hazleford Ferry, where dinner will be provided at six o'clock at the Star and Garter Hotel, and where beds may be secured by letter. Trains leave north and south at nine o'clock.

JOHN HUMPHREYS, *Hon. Sec.*

ORIGINAL COMMUNICATIONS.

Dental Caries as a Result of Inflammation of the Dentine.*

BY ROBERT H. MOORE, F.R.C.S.I.

PRESIDENT OF THE IRISH BRANCH OF THE BRITISH DENTAL ASSOCIATION.

GENTLEMEN,—My first duty on taking the chair on this occasion is to return you my best thanks for the honour you have done me in electing me the President of the Irish Branch of the British Dental

* Being the Presidential Address delivered before the Annual Meeting of the Irish Branch of the British Dental Association, on Saturday, April 27, 1889.

Association for this year, but I very much fear you will find me a very inadequate successor to the eloquent gentleman who so efficiently presided over your Branch last year. However, I must only crave your kind indulgence towards my shortcomings.

It occurred to me to take this opportunity of offering a few remarks on the subject of dental caries, as, though I am perhaps sadly deficient in a knowledge of the literature of the subject, I have had extensive opportunities of observing and treating the disease for many years. I say disease, for the result of my study of the subject is to convince me every day more and more that caries is a morbid vital process, an inflammation of the dentine, acute or subacute, rendering the affected portion of the dentine more or less painful, often exquisitely sensitive to the touch, so that in very many cases the patient can scarcely bear the necessary removal of the affected portion of the dentine. In *Tomes' Dental Surgery** it is stated that "Cases are not infrequently met with in which the carious dentine possesses such an exalted degree of sensibility that its removal cannot be borne, and the patient flinches from the slightest touch of any instrument." Yet if the operator and his patient persevere, and the former succeeds in removing all the affected dentine in a case in which there is still a sufficient covering of sound tissue over the pulp cavity, you will find that the sound dentine is nearly or quite insensible to pain, and that by making an air-tight filling of suitable material you will, in very many cases, completely arrest the progress of the caries, and preserve the tooth for many years. In those cases in which the diseased portion of the dentine is so exquisitely sensitive that the patient cannot bear its complete removal, I endeavour to take away as much of it as will allow of its retaining a small portion of a dressing composed of equal parts of arsenic, hydrochlorate of morphia, precipitated chalk, and carbolic acid—a very small quantity of the above rolled up in a few fibres of cotton wool, taking care to have the tooth perfectly dry, and keeping it so by securing over it a small pellet of cotton wool moistened with copal ether varnish, or a little beeswax slightly softened.

I find that in twenty-four hours the dentine will be nearly or quite insensible, and capable of being removed without serious, if any, pain to the patient. In *Tomes' work* some cases are mentioned in which the use of arsenic to remove the extreme sensibility

* 3rd Edition. Page 313.

of the dentine is stated to have been attended with mischievous results. I can only say I have constantly used the above paste for many years without having ill effects in those cases. I also use the same dressing in cases in which I find it necessary to devitalise the pulp.

There must be vitality in the teeth, or all teeth similarly situated as to food, &c., would be equally attacked by decay, at least at the same periods of life. Yet we meet with mouths in which the teeth remain sound through life, but caries certainly most usually commences in the fissures in the enamel where there appear to be arrests of development, since we so often see caries beginning in the six-years-old molars at as early an age as eight or ten years, and in the middle molars at the age of fourteen or fifteen years.

In cases of caries affecting the anterior and middle molars in very young persons, I was many years ago in the habit of thoroughly removing all softened dentine and filling the cavities with an amalgam of precipitated silver, and I have often subsequently seen them, after twenty or thirty years, perfectly preserved. Indeed I think the above filling appears to be the best and most permanent filling that can be used in such cases.

Again, as to caries being an inflammation of the tooth tissues attended by absorption of the lime salts arising from constitutional causes, I have often observed an outbreak of destructive caries coming on after some severe illness. One case I remember, in which a young gentleman had a severe attack of smallpox, from which he recovered well, except that his teeth, which had previously been sound, commenced to decay generally and rapidly. The influence of mental anxiety sometimes tells remarkably in the same direction. I have known an instance in which the loss of a favourite son in battle has apparently, almost certainly, been the forerunner of an attack of widespread and rapid dental caries; and more than once I have seen cases in which great disappointments have in young people, particularly of the female sex, been followed by similar results—soft white caries suddenly showing itself with great intensity and widespread prevalence. In nursing mothers a precisely similar train of events may sometimes be observed.

Although in Sir John Tomes' work on Dental Surgery (third edition) it is laid down "that caries is an effect of external causes in which so-called 'vital' forces play no part," yet, I think, there are many facts stated in this valuable work which seem to point

strongly in an opposite direction. At page 276 it is stated that "The female sex is distinctly more liable to dental caries than the male. The patient's age, likewise, markedly influences the disease. Thus if it has not occurred before the age of five-and-twenty, there is a strong probability of immunity till about the fiftieth year, when, coincidentally with other manifestations of bodily decline, the teeth again become liable to be extensively attacked by caries."

Sir J. Tomes also mentions a case in "which almost every tooth was attacked by caries during a severe and protracted attack of rheumatic fever, though up to this time, the patient having reached the age of forty, the teeth had remained sound." The same author also states that "there can be no question that the tendency to caries, whether induced by structural deficiencies or perverted functions, is strongly inherited; so strongly, indeed, that sometimes as the several children of the parent successively arrive, at a certain age the corresponding teeth will become decayed."

These passages in Tomes' work, and also the paragraph referring to the extreme sensitiveness of the carious dentine, appear to me to point to caries being an inflammation of the dentine with absorption of the lime salts, and I think this view of the subject is strongly corroborated by the absorption that takes place of the fangs and crowns of the deciduous teeth at their period of shedding, because we see that in cases where they have been attacked by caries, and the pulp cavity opened and death of the pulp has ensued, no further absorption takes place, and the dead roots of such teeth remain in the way of the second teeth, often causing them to take a wrong direction and retarding their development.

In conclusion, the following are the views which I wish to advance in this address :—

1. Dental caries is often, if not always, an inflammation of the dentine.
2. The inflamed dentine is often exquisitely painful when an attempt is made to cut away the resulting caries.
3. The teeth are possessed of innate vitality, else they would be equally attacked by decay at the same periods of life.
4. The progress of inflammation of the dentine may be arrested by suitable antiseptic treatment, and filling so as to exclude air and moisture.
5. Carious inflammation often arises from constitutional

- causes, such as heredity, the cachexia of acute fevers, mental anxiety, or the "grand climacteric" in either sex.
6. The view as to the intimate nature of dental caries which I have advanced receives additional confirmation from an observation of the absorption of the fangs and crowns of the deciduous teeth which takes place at their period of shedding.
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Porcelain Fillings, Plain and Gum Coloured.*

BY WILLIAM DALL, L.D.S.Glas.

MR. PRESIDENT AND GENTLEMEN,—The subject which I have the honour of bringing before you is "Porcelain fillings, plain and gum-coloured."

We know that porcelain fillings are not by any means of recent date, as they were practised some thirty years ago but, as far as I can find, to very little extent and not in the same manner that I intend bringing before you.

At that time and still yet, as far as I know, round and oval cavities, or nearly so, were only filled as in the labial and coronal surfaces, and these I think are only of secondary importance to the cavities which we have so commonly to deal with, and which are so suitable for porcelain in combination with gold, amalgam or white filling, such as proximate, proximate and labial, proximate and lingual, and certain cavities of the first bicuspid.

Gold and amalgam fillings that are at all visible are far from being like tooth substance, and I think the general public look upon gold filling as not quite artistic, because it is not natural in appearance, and upon amalgam, especially when it stains the teeth, as something to be deplored.

I think the Americans go in for too much gold filling, and I am afraid we are drifting into the same error. If this same gold were looked upon as brass or some such base metal, those that had it in mouthfuls would be glad to get rid of it, as often only on account of its value is it at all tolerated. I heard a story lately of a little fellow in one of our infirmaries, who, when the doctor came near him, cried out, "Oh, look at his brass teeth." This

* A paper read at a meeting of the West of Scotland Branch, Glasgow, on February 28th.

remark shows plainly what the ignorant think of it, and if the educated look upon it as not desirable, should we not try to supply a recognised deficiency in this department of our profession by something that is really artistic and that will stand inspection by all classes, and this I do think will be found in porcelain filling.

It is now three years since I commenced practising it a little, but abandoned it as being very troublesome, because I used the cavity stoppers as supplied by the depôts, and they are unfortunately not of the proper shape, nor delicate enough in shade of colour. One of my patients for whom I had done some of this work came to me some time ago and wished me to do more. I was sorry to tell her that I did not now practise it, and she seemed very unwilling that I should do anything else, and as she had told some of her friends before her second visit what she had got done, they too came about this time and desired it. For this and other reasons I was induced to resume it, and this time I determined to persevere. No doubt it is a little troublesome, but with practice and experience one may become expert and even excel in it, and I think your patients will all hail it, as mine have done, as the best kind of filling when exposed to view.

I will now show you some specimens of the cavity stoppers as supplied by the depôts, and also of those made by myself and most generally used by me.

I have also prepared for your inspection a few specimen teeth, which perhaps will convey some idea of its appearance and how it is practised by me, and a gentleman has kindly consented to come here that you may see it in the mouth, which is really the place to see it to advantage.

It will perhaps now be better for me to give you the *modus operandi* of porcelain filling.

First of all I will treat simple cavities, such as are in the labial surfaces of incisors, &c., and then compound cavities, such as proximate with labial, or proximate with lingual.

No. 1 is a specimen of a simple labial cavity, and a compound including proximate, labial, lingual and cutting edge, which is one of the most difficult cavities we have to deal with.

The mode of the simple is extremely easy. First shape your cavity, either oval or round, so as to save as much tooth substance as possible, finishing with a very fine fissure bur, as a rough one is apt to chip the edge of the cavity. Then select a piece of porcelain as near the size and shade as possible. Next grind

it to fit, and then insert with an oxyphosphate or any other white filling the operator thinks best. Allow this to harden, then use a corundum wheel to grind it flush with the body of the tooth, polishing with water of Ayrstone, and moose hide points with a little pumice, or, to get a very fine polish, a little putty powder may be used.

The treatment of the compound is somewhat more difficult. Shape your cavity, making a retaining point at the cervical border, then insert an anchor screw next to the lingual wall midway between the cervical border and cutting edge, so as to support your gold backing. Pack your gold in the ordinary manner, leaving a cavity for your porcelain front. Fix it, grind and polish as in the simple.

No. 2 contains two cavities, one of which is compound, including proximal, labial and lingual walls, and the treatment of such is much the same as in the compound of specimen No. 1. You will notice, however, that the lingual and half of the proximal walls are built up with gold, leaving a cavity for the insertion of porcelain.

No. 3 is a specimen of a simple labial cavity as in No. 1, but including a gold line. The mode of treatment is much the same, only invert your cavity stopper so as to leave room for your gold line. This line may be packed with ribbon or other suitable gold. In the case before you I used Wolrab's No. 5 cylinders.

No. 4 is a specimen of a compound cavity proximate with labial. The lingual wall and cervical border in this case were first packed with gold, the porcelain was next inserted, and then the gold line packed on the labial surface.

No. 5 shows two cavities ready for the insertion of porcelain. You will notice that on the distal side the labial wall is lined with gold before the insertion of porcelain, which mode is somewhat different from No. 4.

No. 6 is a specimen containing two cavities, which are treated much in the same way as the preceding ones, only instead of gold, amalgam is used which also makes a very good filling.

Nos. 7, 8, 9, and 10 are specimens of molar teeth filled with porcelain in different ways.

Nos. 11 and 12 show cavities filled with porcelain in combination with white filling.

No. 13 shows two cavities in the sides filled with gum-coloured porcelain. I treated a case like this some time ago, in which the

gum had shrunk from the tooth, and I can assure you I was more than pleased with the result.

The only remark I have now to make before closing is, that for this kind of work, Ash's teeth are really the most suitable for cutting down, as shown on the slides, as they are of a fine grain and allow of a much more beautiful polish than the American stoppers which you have just seen.

Professor Flagg on Zinc Phosphates.

WE are indebted to our friend Mr. Waite, of Liverpool, for the following communication from Dr. Flagg:—

Zinc phosphates are in just as indefinite a status as ever they were, with the exception that real workers are not now trying to make such fluids and crystals, as have been proved to be capable of making the *quickest setting* and *most durable* fillings, because such fluids and crystals do not remain good more than four to eight months. Just in proportion as fluids are less good, so they remain *that* good for greater length of time, and a pretty good fluid will last from ten or twelve to fourteen months, sometimes even longer.

Next comes the celebrated "non-deteriorating fluid," which is made by allowing almost any make of clear fluid, having a specific gravity of 52 to 60 degrees, stand until it separates, when, if it does this *clear* and *thin*, it is a *very poor* fluid; but it stays as good as it is for years, three or four at least, and thus it is non-deteriorating, because it has deteriorated about all that it can.

It is from this kind of make, however, that the very best fluid ever produced has resulted, except that when this result is obtained the separation is very *distinctive*, and the resultant fluid comparatively small in quantity. When this excellent fluid is secured (which according to my work is about once in five or six trials, and no one knows why it is, or how it is that it comes so infrequently, so far as I am informed), then this fluid will not keep first-rate for more than four or five months, and often begins to deteriorate in even less time. Such crystals and such fluids as are known to be excellent, make those fillings of zinc-phosphates which are occasionally seen doing service in wonderful perfection for six or eight years or more. Thus far it has proved impossible to do any better with phosphate menstrua than this: All the various makers (Flagg in-

cluded) are in one boat so far as regards the fluids, crystals, or syrups with which they make their powders into mass for filling. Hence the effort now seems to be to get such a fluid as will best subserve the legitimate use of zinc-phosphates, which is never for fillings, strictly as such (unless they are expressly stated to be experimental), and then not to test which material is best, but merely to try as to whether the material one happens to have on hand will subserve a good purpose in that individual case. This seems poor professional work indeed, but I would unhesitatingly state that to be the best which the most proficient worker in zinc plastics can do, and the most ignorant can do just as well. The legitimate uses for zinc-phosphates are lining cavities, strengthening frail walls, largely filling such cavities as are to be partially filled with gold on the score of expense, or with amalgam, on the score of easy removal and possible contingencies; or for durability of filling, combined with non-conductivity, maintenance of colour, &c., and for increased adhesion of fillings in saucer-shaped cavities, which are to be filled with combination fillings of zinc-phosphate and amalgam; by such I mean fillings in which the two materials are introduced at such times as both are plastic, and thus the adhesion of the zinc-phosphate and the resistance of amalgam to attrition are utilized in one filling. These are the proper uses for zinc-phosphates, and it subserves all these purposes so very well that it seems a shame to ask it to do what it is well known it can seldom perform, and then if it fails, condemn it as unworthy. In my opinion the unworthy is the individual who thus stigmatizes one of the most valued servants of dentistry.

And now I would say that, in the prosecution of this work of obtaining a reliable fluid for long conservation, no other modification seems to have given the results that we have derived from the gelatinising of the solution of phosphoric acid. Whatever changes may yet take place in the phosphoric acid constituents of the menstruum (and these changes are protean), gelatin seems to retain its value for so long a time as to warrant the supposition that most at least of the material sold shall be utilised, while yet it is worthy of confidence; and even this fluid is impossible of accurate or positive duplicature. Made by like measurements and weights, dissolved by like heating for given length of time, filtered by similar filtration, no two consecutive results are precisely the same, and some are widely different. This is not so

marked, however, in the gelatin fluids, as it is in the other good menstruum, but it is sufficiently so to produce, as the results of time, some half-dozen different varieties. First, those which maintain an almost absolute integrity as amber coloured, syrupy fluids; second, those which partially gelatinize with a sort of colloid jelly at the lower part of the fluid; third, those which separate into a viscid, whitish portion below, and a clearer, thinner portion above; fourth, those which increase markedly in viscosity, without materially changing colour, becoming so thick as not to pour from the phial, but which must be taken by means of a spatula or small probe. These are the most usual changes which occur, but unlike those of the better fluids (those most liable to become promptly worthless), these changes do not appear to cause much depreciation of value in this reasonably good menstruum—at least not for a long time.

By stirring together the separated portions, a fluid is obtained which continues to make good results, and the thickened fluid seems only to make a somewhat slower setting mass, a change which to many is rather acceptable than otherwise. Thus it is, that in our last three or four years of working upon zinc plastics, the gelatinized fluids have markedly taken the front rank, and with this work which has, we think, done something of positive value, and has more than ever placed the zinc-phosphates out of the category of material for filling, we have constantly presented to our profession repetitions of the same old compounds, which are advertised under various names, when they are truly unimproved, and utterly unreliable.

I have no time to enter into the discussion of so-called improvements in zinc-phosphate powders, but I will merely say that as yet the old so-called nitrate of zinc powder, pure and unadulterated, is the best base we have ever had.

LEGAL INTELLIGENCE.

Willis v. Jackson.

HALIFAX BOROUGH COURT, *April 16th and 25th*, 1889, before Alderman RICHARD HORSFALL and JOHN HALL, Esq.

Important prosecution under the Dentists Act.—April 16th.

ARTHUR LEOPOLD JACKSON, of 4, Akeds Road, Halifax, was charged "that he, during the months of March and April, 1889, at Halifax, in the borough aforesaid, not being a legally qualified

medical practitioner, and not being registered under the Dentists Act, 1878, did take and use the name and title, addition or description of dentist, or addition or description implying that he was registered under the said Act, or that he was a person specially qualified to practise dentistry contrary to the form of the statute in such case made and provided."

Mr. Christopher T. Rhodes, Solicitor, Halifax, appeared for the prosecutor, Mr. William Willis, L.D.S.I., Halifax; the defendant was represented by Mr. Waugh, barrister, instructed by Mr. J. R. Farrar.

Mr. RHODES produced the Register, read the section of the Act, and explained the facts of the case at some length, urging that the case was an important one to the profession, and that the circumstances were peculiar, and such as to aggravate the offence. The defendant was apprenticed to Mr. Willis (the prosecutor) in April, 1886, and there was a covenant in his indentures that he was not to practise within five miles of Halifax, after he was properly qualified, without the permission of Mr. Willis. Defendant was about nineteen years of age when the indentures were executed, and the law provided that an infant might either repudiate or confirm a contract which he had entered into for his own benefit, on his coming of age. The defendant had chosen to repudiate his honourable agreement. Soon after the defendant came of age, about March, 1888, he began to absent himself frequently, and eventually disagreements resulted, and the indentures were broken.

The CHAIRMAN asked Mr. Rhodes to keep to the charge.

Mr. RHODES replied that the case was simple enough on the face of it, but he was entitled to shew that the defendant had broken the law deliberately, and to ask for a substantial penalty, rather than one of a nominal amount as where a person had offended innocently. Some correspondence had taken place between Mr. Willis and Mr. Farrar, wherein Mr. Farrar had stated, in reply to Mr. Willis's demand that the defendant should return to his duties, that the defendant "had made other arrangements." It was soon seen what these "other arrangements" were, as the defendant had now set up business in Akeds Road as a dental surgeon, and in a circular which he had issued to Mr. Willis's patients and others, he stated that "he" had opened a "dental surgery" and steam laboratory, where teeth were carefully extracted, nitrous oxide gas administered, filling, scaling, and all other dental operations were performed daily, under his own supervision, &c. He had also a large brass plate fixed on the wall outside his premises, bearing the words:—

MR. ARTHUR L. JACKSON,

(Late with Mr. Wm. Willis)

Dental Surgeon.

NITROUS OXIDE GAS ADMINISTERED DAILY.

Besides this he had an elaborate lamp with coloured glass on the top of a massive pillar, announcing that he was

JACKSON,
(Late with Mr. Wm. Willis)
DENTIST.

and he had issued cards bearing the words :—

MR. A. L. JACKSON.
Late with Mr. William Willis, L.D.S.I.
Dental Surgeon, &c.
4, Akeds Road, King Cross Lane, Halifax.

It would be seen from the photograph of the brass plate and a sketch of the lamp (which would be proved) and the cards that the words "Jackson" and "Dental Surgeon" were very large, whilst the words "late with Mr. Willis" were very small, and it was difficult to imagine what the defendant meant to imply by these words and signs if he did not mean to imply that he was a person properly qualified to practise dentistry. The signs were calculated to mislead the public and it was in the public interest as well as in the interest of himself and the profession generally, that the complainant, Mr. Willis, had come boldly forward to prosecute the defendant without invoking the aid of a common informer. It was a dangerous proceeding in many cases for a fully qualified practitioner to administer nitrous oxide gas, yet the defendant unblushingly advertised that he administered nitrous oxide gas daily. He not only implied in every way he could that he was properly qualified, but he actually practised as a dentist, and though he was not charged with practising, he had given a receipt on one of his memorandums signed by himself for 2s. 6d. for "professional services," for "scaling" teeth.

The CHAIRMAN : Confine yourself to the charge.

Mr. RHODES continued that he was confining himself to the charge, for on this very document were the words :—

4, Akeds Road, Halifax,
April 10th, 1889.

TERMS 2½ MONTHLY.

NITROUS OXIDE GAS.

MR. B. R. MOTLEY, Sowerby Bridge.
Dr. to ARTHUR L. JACKSON.
(late with Mr. WILLIAM WILLIS.)

Dental Surgeon.

Professional services, scaling	...	...	...	...	2	6
Tooth powder	...	...	...	...	1	0
					3	6

Received with thanks.

A. L. JACKSON.
April 10th, 1889.

The document was a very important one in the case, as shewing the defendant's representations, for although a blacksmith might extract teeth and practise dentistry, if people chose to go to him, without infringing the Act, he must not hold himself out as a dentist and thereby deceive the public, in whose interest the Act had been passed. The defendant's conduct throughout had shown a deliberate intention to defy not only Mr. Willis, the British Dental Association and the dentists in town, but the law itself, and on this account it was necessary to go more into detail that the Bench might consider whether the case was one for a substantial penalty or merely one of a nominal amount only.

The CHAIRMAN said he had an appointment at 1.30 and the case would have to be adjourned.

Mr. WAUGH objected.

Mr. RHODES said he was sorry the Chairman had to leave, but he had a duty to perform to his clients and he could not consent to have the charge only half heard on that account, but he would submit to adjournment, when probably the complainant might be also represented by counsel.

After a further protest by Mr. Waugh, this was agreed to, and Thursday, the 25th, was fixed as a special day for the hearing.

Thursday, 25th April, 1889.

(Before the same Justices.)

Mr. Walter Beverley, barrister, Bradford (instructed by Mr. Christopher T. Rhodes, solicitor, Halifax), now appeared for the prosecution, and Mr. Waugh, barrister, Bradford (instructed by Mr. J. R. Farrar, solicitor, Halifax), again appeared for the defendant.

Mr. BEVERLEY said he had an application to make. The case was originally before the court on the 16th of that month, when the complainant was represented by Mr. Christopher T. Rhodes. It was partly opened, and for some reason or other stood adjourned until that day. The application he had to make was this: he had only been instructed between the original date of hearing and that day, and he had not had the opportunity or the advantage of hearing or knowing what took place on that occasion. He proposed to adduce certain evidence in support of that information, and he thought it would be convenient to all concerned that he should shortly state the circumstances, although an opening might have been partly made.

Mr. WAUGH said he must object. They had had all that before. They were in the midst of the evidence; Mr. Willis was in the box, and was being examined when the adjournment took place. He failed to see why he (Mr. Waugh) should be kept there a moment longer than was necessary. An hour and a-half was spent upon the case on the previous occasion. He asked that it might now be proceeded with in the ordinary course.

The CHAIRMAN: I think we had better allow Mr. Beverley to open his case.

Mr. BEVERLEY, proceeding, said the complainant was a dental surgeon in practice in Halifax, and the defendant was a young man, who some short time ago was in the employ of the complainant. He made that statement because it might be said there was some feeling between them. As a matter of fact, complainant was an interested party undoubtedly. He was interested in his profession, pecuniarily and otherwise. But he took those proceedings, not only in his own interest, but with the full knowledge and approval of the Dental Association. That case really involved a very simple issue. The information was laid under the 3rd Section of the Dental Act, 1878, whereby it was enacted that on and after the 1st day of August in that year, a person should not be entitled to take or use the title of dental surgeon unless he had qualified in a manner clearly indicated, registration under the Act being included. There was a further section which provided as to what should constitute proof in regard to registration; and he (Mr. Beverley) should produce a copy of the Register, which must be taken as conclusive evidence against the defendant, whose name did not appear there. As a matter of fact, he did not think it would be contended that the defendant's name did appear in the last certified copy of the Register. When this Act first came into operation, and down to 1886, it was necessary that all proceedings taken under the Act—proceedings of this nature—should be with the sanction and approval of the Dental Association. But in the Medical Act of the latter year it was provided that a private individual might take such proceedings. That was how it was the complainant in the present case had come forward in his own person and laid this information. Under the 26th Section of the Medical Act there was also contained a further definition of the meaning of the words, "title, addition, or description," and showed them to be clearly intended to include anything which might be calculated to lead the public to the belief that the person using those words was a legally qualified dentist, and that he was registered under the Dentists Act. He (Mr. Beverley) should produce before the court that day evidence which he ventured to think the court would say was of a conclusive and convincing character. In March, 1886, the defendant was, with his own consent, and that of his guardians or sureties, apprenticed to the complainant; and from that time up to about November, 1888, he attentively performed his duties, and no complaint could be made in regard to them. However, after that time, he seemed to have got cross with his master; but the difference between them need not be gone into. Suffice it, that the result of it all was that in February last the defendant set up a dental laboratory of his own, and began to practise on his own behalf. It was on account of his so practising in the months of March and April, and his conduct in that period in

calling himself a surgeon dentist, that those proceedings had been instituted. [It might be insinuated that the complainant had not behaved well to defendant, but however that might be, however badly the complainant might have behaved, with that the justices on that occasion had nothing whatever to do]. The onus was upon the complainant to show that defendant had misled the public—that he used a certain description, addition, words, or title which were calculated to lead the public to the belief that he was a legally qualified and registered dentist. It was not absolutely necessary for him to show that the defendant had practised as a dentist. It was sufficient to show he had used words which would mislead the public. That he (Mr. Beverley) proposed to do by proving to their worships that he had used in front of his door a certain sign; that he had hung out a certain lamp composed of coloured glass, and containing a certain description; also that he had sent out circulars and cards, soliciting business and representing what he could do—in fact, that his business comprised almost everything a dentist was capable of performing. On the sign, Mr. Jackson had the following inscription:—

ARTHUR L. JACKSON.

(Late with Mr. W. Willis.)

Dental Surgeon.

NITROUS-OXIDE GAS ADMINISTERED DAILY.

As a matter of fact, the words "Late with Mr. Wm. Willis" were in very small letters, while the words preceding and immediately following were in very large type. The latter were so large as compared with the smaller words that those who ran by could read them, and must have concluded that Mr. Arthur L. Jackson was a dental surgeon. The fact that Mr. Willis's name was there made not the slightest difference. It might be argued that the words "dental surgeon" applied to Mr. Willis, and not to the defendant. But if those words were not intended to be used for the benefit of the defendant, for whose benefit were they? It was quite clear what the object was, but they were not there to deal with the question of intention. What was the effect here was what they wanted to arrive at, and it would be shown conclusively that, apart from object, the effect was clearly to mislead the public. The 1878 Act was passed, after considerable agitation, with the intention clearly, firstly, to protect an honourable profession, and secondly and more importantly, to protect the public. As their worships would know, dentistry, as now practised, was really a very high art indeed; and men, in order to get into that profession, had to undergo a certain course of study, and were compelled to obtain a diploma, and also compelled to be registered under this 1878 Act. Now, there was nothing to prevent a man—a quack if they liked, though he did not intend to be unkind—from practising dentistry.

That was, there was nothing to compel a man to be registered ; but if he advertised himself as a dentist, or rather if he held himself out to the public to be a dentist, either expressly or impliedly, by word or deed, by sign or in any way whatever, then he brought himself within the operation of the Act. Well, now, that was what the defendant had done. He had caused the sign already referred to to be placed in front of his house. He had displayed a lamp with a similar inscription. He had issued cards containing the words "Arthur L. Jackson, late with Mr. Willis, L.D.S.I., 4, Akeds Road, Halifax." He (Mr. Beverley) should produce one or two witnesses from whose custody such circulars came, and in that way he should make their evidence against the defendant. It might be contended, on behalf of the defendant, that the fact of his inserting the words "Late with Mr. Willis" protected him from proceedings under that Act ; but, as he had said, if the words "dental surgeon" were not intended for defendant's own benefit, for whose benefit were they ? If they were useless, why had he used them at all ? If they were mere surplusages, they ought never to have appeared. It was quite clear what the intention was. But it was not only that the public might have been misled ; the public, as a fact, had been misled. Even since these proceedings were instituted, the defendant practically had pleaded guilty. Since the summons was issued, Mr. Jackson, no doubt under advice—very good advice—had caused the plate to be taken down and the lamp to be removed ; nevertheless, there were still in circulation numbers of his cards. Mr. Jackson was yet understood and believed, by a long-suffering British public, to be what he had represented himself to be, and he was in the practice of dentistry almost daily. In such professions, where there was a large amount of business, certain gases were used. Defendant had advertised that nitrous-oxide gas was administered daily. By whom, then, was it administered ? Mr. Jackson was the only man on the premises, and he was a man who had no longer any connection whatever with the complainant. As a matter of fact, the two were at daggers drawn, and one was contemplating legal proceedings on account of their connection having been severed in a certain way. Mr. Willis's name had been put upon the sign in question without his consent. Well, here was a man deliberately using his name in this way in order to evade the Act of Parliament, and to enable him to carry on this illegal practice. He (Mr. Beverley) proposed to put into the box the complainant, and in particular one man, Motley, who was operated upon by the defendant upon the 10th of April last. After being operated upon, Motley obtained a receipt for the sum which he paid to the defendant. This receipt had a heading as follows : Mr. B. R. Motley, Sowerby Bridge, debtor to Arthur L. Jackson (late with Mr. Wm. Willis, dental surgeon). Here was another evident intention to deceive. Defendant's own name was in large print ; then came Mr. Willis's in

very small type and covered with flourishes ; then the words " dental surgeon," again in large type, and then what appeared to be a bracket. Again, it was quite clear defendant had intended to carry his deceit right through down to the time of receiving the money and giving the acknowledgment. The man Motley would tell the Bench what he saw outside the premises ; he would also describe the defendant's room, which was fitted up in the ordinary way, and he would repeat the conversation that passed between them. He (Mr. Beverley) admitted Motley had not been deceived. The intention was to obtain as much evidence as possible in behalf of the prosecution. At that time the complainant was acting in concert with the dental surgeons of the district. This man Motley was sent to obtain evidence. Apart from that, however, he (Mr. Beverley) would show conclusively that what he had said to the defendant's methods of advertising was correct ; therefore he had evidence enough, even without that of Motley. Still, some little scheme of the kind was generally necessary in order to obtain evidence for such cases, and as a rule there had been a common informer. Here Mr. Willis, the complainant, came forward boldly. They had their own interests to preserve, and they had a duty to discharge. Some correspondence had passed between the parties, but the defendant had persisted in what was complained of. Mr. Rhodes was consulted by Mr. Willis, and afterwards by several dentists ; and, after writing unavailing letters, gave notice of legal proceedings. There was no excuse for the defendant. This was a case of premeditated intention to evade the statute. A young man, apprenticed at nineteen years of age, and now twenty-one or twenty-two, deliberately set himself to evade the statute, to the injury, not only of the complainant, whose name had been used by the defendant so freely, but of the profession generally. But that Act of 1878 was principally intended to protect the public. Here they had dentists using gas. As a rule, when such gas was administered—at all events, where it could be afforded—it was thought necessary to have in attendance a professional medical man. But here they had a young man, with a full knowledge of the circumstances, who had been in a dentist's shop only about two years, acting in the way the defendant had done, to the disadvantage, not only of dentists, but of the public especially. He (Mr. Beverley) did not see how it could be contended defendant was in any way to be excused, or that there was a single extenuating circumstance. He should ask the justices, not only to convict, but to inflict a substantial penalty. That was not a case wherein ignorance could be taken into consideration at all. The defendant, a young man of ability and education, deserved, he (Mr. Beverley) was going to say, the heaviest penalty the magistrates had power to inflict.

Mr. WILLIS, Licentiate of Dental Surgery, Ireland, complainant in the case, was examined by Mr. Beverley, as under :—

You know the defendant ?

I do.

Who, in 1886, was apprenticed to you ?

He was apprenticed to me.

At what period of the year did he commence to work at your establishment ?

In March.

When did he leave your service ?

Finally ?

Yes.

November 12th, 1888.

Where was he living at that time ?

No. 1, First Avenue.

What has he been doing since February last ?

He has been conducting the practice of a dentist in Akeds Road.

Mr. WAUGH : Do you know that of your own knowledge ?

Have you been there ?

I have passed the house.

You have not been inside ?

I have not.

By Mr. BEVERLEY : Do you know where he has lived since February last ?

Yes ; 4, Aked's Road.

Have you passed the house ?

Repeatedly.

Have you seen anything, when passing, to which your attention has been drawn ?

I have. The last week in February I saw there was an elaborate post with a lamp.

Where was that in regard to the front door ?

There is a gate to enter before you get to the front door, and it was it the gate, close to the railings.

Did you notice anything on the lamp ?

I noticed that there were letters which I can give you.

Mr. BEVERLEY : Yes, please.

Mr. WAUGH : I object.

Mr. BEVERLEY : What is your objection ?

Mr. WAUGH : This is in writing or in print. There is a way of producing it, therefore we cannot have secondary evidence.

Mr. BEVERLEY : My answer to that is that the lamp has been removed, therefore this is the next best evidence.

Mr. WAUGH : There is no proof of that. You must have proved that it has been destroyed or lost, or that it does not exist. No notice to produce it has been given.

Mr. BEVERLEY : This is a case of a quasi-criminal nature, where the rules of evidence are not to be construed strictly.

Mr. WAUGH : They are to be construed very much more strictly on that account.

After a little further contention upon the point, the examination of the witness was allowed to proceed :—

Did you notice anything written upon this lamp ? I noticed letters.

What colour was the glass ?

A light colour.

Have you passed there recently ?

I have.

Do you know when you last saw the lamp there ?

Yes, I do.

When was that ?

The 27th March.

The lamp was still there ?

Yes.

Mr. BEVERLEY : I do submit I am entitled to have these words now.

Mr. Waugh renewed his objection, saying he threw out a challenge upon that very subject when the case was last before the Court, and the prosecution had had a whole week in which to give notice.

Mr. ROBERTSON (who was acting for the magistrates' clerk, Mr. J. B. Holroyde, the latter being confined to bed) decided in favour of Mr. Waugh, but took a note of Mr. Beverley's contention, who observed that the case might possibly go higher.

Mr. BEVERLEY (to complainant) : Have you been past since the 29th March ?

Yes.

Is the lamp there now ?

No, the pillar is there, but the lamp has been removed.

Did you notice anything else outside the house ?

Early in March I noticed a brass plate on the front of the house.

Where ? In what position in regard to the door ?

On the left on entering the door.

Did you notice anything upon the plate ?

I did ; it was engraved.

Is the plate there now ?

It is not.

Can you remember what was engraved upon that plate ?

(Here the same objection was taken.)

Have you caused a photograph to be taken of the front of the house ?

I have.

By whom ?

Mr. Ramsley, photographer, Halifax.

Do you produce a copy of the Register under the Dentists Act, 1878 ?

I do.

A Register containing the names of legally qualified dentists ?

That is so.

Have you searched the Register for the defendant's name?

Yes, sir.

Does the defendant's name appear there?

It does not.

In the practice of dentistry, you use, I believe, nitrous oxide——

Mr. WAUGH objected.

Mr. BEVERLEY : As a fact, do you in the practice of your profession use nitrous oxide gas?

Yes.

That, I believe, is a gas administered to patients who undergo treatment?

Yes.

Now is that gas a gas which requires a skilful person to use?

It is.

As a gas, is it dangerous if improperly used?

If improperly used, it is a positive danger to patients.

Between you and the defendant I believe some difference has arisen?

Yes, in consequence of his repeated absences.

In taking these proceedings, are you acting in concert with other registered dentists in this town?

I am.

And I believe you have been in communication with——

Mr. WAUGH : I object. The documents must be proved in the proper course.

Mr. BEVERLEY : You and these other gentlemen have consulted Mr. Rhodes?

Yes.

Did you on the 18th of March instruct Mr. Rhodes to write a letter to the defendant?

I did.

And did your solicitor, in reply, receive a letter on the 19th March, from Mr. Farrar?

Yes. (Letter put in, asks Mr. Rhodes to inform the writer in what respect defendant implied he was a properly qualified dentist, adding that Mr. Jackson had no intention to lead anyone to believe that he was registered as a dental surgeon.)

Could anyone, in walking or running past the lamp or the sign, have read the inscription readily?

A portion of it.

Cross-examined : You made great complaint about the conduct of this young man towards yourself? Your chief cause of complaint was that he practised in Halifax contrary to the terms of the agreement?

That was one of the conditions.

Are not you yourself in covenant or engagement not to practise in Halifax?

No.

Do you know Mr. Robertshaw ?

I do.

Weren't you under engagement with him not to practise in Halifax ?

I was.

Do you practise in Halifax ?

Yes, with his consent.

Was it in writing ?

No, there was no writing between us at any time.

As a matter of fact, you sent defendant away ?

Not finally.

Did you send him away ?

I objected to have him in my place for a time for absenting himself.

Yes ; according to the letter from Mr. Farrar on the 4th November, you declined to allow him to continue with you ?

That is not true.

"Your action is a distinct breach of the apprenticeship indenture."

This was true ?

Part of it.

Did you ever reply to the untrue part ?

I sent a reply.

To whom ?

To Mr. Jackson.

But this was from Mr. Farrar ?

I took no notice of that. I was not in correspondence with Mr. Farrar.

I see. Will you give me the date of the letter you wrote to Mr. Jackson ?

I cannot give you the date.

The conditions cancelling the indenture, were they that you should receive £100 ?

Yes.

But you declined to teach him ?

No, I sent for him back.

The letter from Mr. Farrar states that you had chosen to break the agreement, and there was nothing more to be said. From first to last did you ever, in writing, repudiate the suggestion that you had broken the agreement ?

He had been away for a month without my consent. When I met him, I asked where he had been, and he said he had been consulting his lawyer. I asked if he had opened a laboratory on his own account, and he said "No." I merely objected to his coming that day. (In confirmation of this, a letter from witness to the defendant was produced.)

Now, let us come to the real issue. Are there other people in Halifax practising as you suggest he has been practising ?

There are.'

For how long has that been going on? Years?

Probably more than a year.

Have you been asked to join in taking proceedings against these

Yes.

Have you declined?

No.

Have you taken them?

No, but I didn't decline.

This young man was with you, and you have chosen to take proceedings against him?

Yes.

All for the benefit of the public and the profession, but you have been permitting other people to do this over twelve months.

By Mr. BEVERLEY: You stated before that you were acting in concert with other dental surgeons in Halifax?

Yes.

You were apprenticed to Mr. Robertshaw?

Yes.

And you practise with his consent?

Perfectly.

As a matter of fact, is Mr. Robertshaw acting with you and others in these proceedings?

He is.

And has he, with a numbers of others, retained Mr. Rhodes to act in this matter?

Yes.

Benjamin Rowland Motley, brass founder, Sowerby Bridge, was examined by Mr. Beverley, as under:—

What is your name?

Benjamin Rowland Motley.

Where do you live?

Sowerby Bridge.

What are you?

A brass founder.

Do you know the defendant Jackson?

Yes.

Had you known him prior to the 10th of April last?

Yes, I knew he was apprenticed with Mr. Willis.

Now, I think on the 10th of April last you called on Mr. Willis, didn't you?

Yes.

At the request of Mr. Willis?

Yes.

Was that at No. 4, Akeds road?

Yes.

Did you notice anything outside Mr. Jackson's house ?

I noticed the brass name plate.

The brass plate we have heard spoken of ?

Yes, and the lamp.

Did you see Jackson ?

Yes.

Where was he ?

Inside.

Yes, but what room ?

In his laboratory, where he operates upon his patients.

May we call it the consulting room ?

Yes.

Well, now, just tell me shortly the appearance of the room.

Well, he appeared to me to be very well fit up for the business.

Mr. WAUGH : For the business of what ?

Dentist.

Mr. BEVERLEY : Yes ; I'll take that answer without any more. Now, as shortly as you can, tell us what took place. What was it that occurred between you and Jackson ?

I said I had been troubled with toothache occasionally, but I didn't happen to have it then. I said—would scaling prevent toothache ?

What did he say to that ?

He said he thought it would. Then I showed him a loose tooth I had, and asked what he would put a new tooth in for ? He wanted 5s. for a new tooth.

Did he say anything more ?

He said that it would be such as other dentists charged 7s. 6d. for.

Did he say that ?

Yes. He said he could put one in for 3s., but that was the lowest price.

Was anything more said ?

I would not have it drawn out. I said he would have to scale the teeth.

Now, as a fact, did he scale your teeth ?

Yes.

Did he afterwards make you a charge ?

Yes.

Does this paper show what he charged and what you paid ?

Yes, that's it.

Is that the receipt you obtained ?

That's it, sir.

By Mr. WAUGH : Did he hand it to you ?

Yes.

By Mr. BEVERLEY : Did he make it out in your presence ?

Yes, I saw him write it.

Now, with the exception of Mr. Jackson, did you see any person in the house ?

I saw—I think it was his wife.

Yes, but did you see any man?

No.

Cross-examined by Mr. WAUGH: You have had considerable experience in the business of a dentist, I presume?

I can't say I have.

What are you by trade?

A brass founder.

Therefore you consider that qualifies you to describe a room which is fitted up for the business of a dentist?

Yes.

What would you consider, as a brass founder, necessary to the fitting up of a dentist's?

Oh, I have been through Mr. Willis's place scores of times; I think I should have a little knowledge of such things.

A little knowledge! which they say is a dangerous thing, you know. I am very glad you found everything so well fitted up. I hope the scaling of your teeth was properly performed?

Well, I thought he was a long time about it.

But he did it pretty well?

Yes, on the whole, I think.

Now, with regard to this receipt. Did you notice that the words "Late with Mr. Wm. Willis" were in brackets?

At the time, do you mean?

I mean at the time you read it over.

It was sufficient for me to see he had receipted it. I didn't notice more.

Then you didn't notice anything at the time?

Yes, I did; I saw him sign it.

But the words printed you did not notice?

Not particularly at the time; I did afterwards.

You were sent there by Mr. Willis?

Yes.

You were playing the part of an informer, then?

Just as you like it.

No, no. I want to know how you like it. A sort of decoy duck, eh?

Well, if it comes to that we are all informers for one another. You are a kind of informer for Mr. Jackson.

Mr. WAUGH (producing a brass plate): Now, is that the sign you saw? If you won't produce it, I will.

WITNESS: Yes, sir.

Mr. BEVERLEY asked permission to look at the sign, which showed the bracket to end at the word "surgeon" instead of after the name "Willis" as quoted above.

ALBERT WARHURST, aged fifteen, one of Mr. Rhode's clerks, said that on the 11th March, by Mr. Rhodes' instructions, he visited the

defendant's house, No. 4, Akeds Road, and made a sketch (produced) of what he saw outside.

Mr. WAUGH objected that this was an attempt to get in what had previously been excluded by the magistrates on the advice of their clerk.

Mr. BEVERLEY : Was the plate on the wall ?

WITNESS : Yes.

Mr. BEVERLEY : Is there anything different now ?

WITNESS : There was not that scratch there after the word "surgeon."

Mr. WAUGH : Will you swear there was a bracket after the word "Willis ?"

WITNESS : Yes, there was one before the word "Late," and one after the word "Willis."

FRED. RAMSLEY, photographer, Halifax, said he took a photograph (produced) of the defendant's house on the morning of the 7th April.

ARTHUR WOLFENDEN, dental surgeon practising at Halifax, was questioned by Mr. Beverley as under :—

You have heard the evidence in regard to the appearances outside the defendant's premises—the plate and the lamp. Have you seen them, and do you agree with the evidence given ?

Yes.

In the course of your practice, do you use nitrous oxide gas ?

I do.

Is that the gas used by dentists generally in the profession ?

It is.

For an unqualified or unskilled person, would it be dangerous to use that gas ?

It would.

Dangerous to life ?

Yes.

SARAH MARGARET BUCKLEY, 5, Abbott's Ladies' Homes, Skircoal Moor Road, was the next witness.

By Mr. BEVERLEY : Do you know Mr. Jackson ?

No.

Look at that circular. Did you receive it ?

Yes, on April 14th, on or about.

Mr. WAUGH : What has that to do with me ? It is not proved to have come from my possession.

Mr. BEVERLEY : I think I can prove that.

Mr. WAUGH : In addition to that, I object that this is subsequent to the date of the summons.

Mr. BEVERLEY (to the witness) : How came you to receive it ?

Mr. Willis asked me to send for it, as I had misplaced a similar one I had received previously.

Had you any communication with the defendant ?

Yes, I wrote to him.

And when was it ?

It would be about the 13th April.

How long before you received this ?

Mr. WAUGH : I object.

Mr. BEVERLEY : I know you want to keep this out.

Mr. WAUGH : It's an attempt again to give secondary evidence.

WITNESS said she wrote on the 13th April and received the circular by the next post.

Mr. WAUGH objected that it was not proved to have come from the defendant. This was overruled, whereupon Mr. Waugh intimated that he should ask for a case on that point.

ARTHUR COCKER, dental surgeon, Halifax, said he had seen the exterior of the defendant's house, and he agreed with the evidence of the other witnesses, both in their description of the premises, and in their testimony that it required a man of skill to use nitrous oxide gas, which was mostly used by dentists.

Mr. BEVERLEY said this was the case.

Mr. WAUGH submitted that no offence had been proved within the meaning of the Act of Parliament, looking at the summons upon which the charge was brought. That was a quasi-criminal proceeding, and the onus of proof lay with the complainant. The defendant was charged that, not being a legally qualified medical practitioner, and not being registered under the Dentists Act, he did certain things. The only thing the prosecution had proved was that he was not registered as a dentist. But they must prove that he was not a legally qualified medical practitioner. The mouth of his (Mr. Waugh's) client was closed, and he could not give evidence ; therefore the onus of proof was rightly put upon the prosecution. In support of his contention, Mr. Waugh cited the case of *Pedgriff v. Chevalier*, reported on page 225 of the 29th volume of the *Law Journal* (May cases), and referred to Section 40 of the Medical Act. He urged that, according to the authorities quoted, the prosecution must negative every possible presumption which would entitle a person accused to benefit before they could ensure a conviction. It was not sufficient evidence that the name of the defendant did not appear upon the Register. They ought to have gone further on the summons in question, and shown he was not a person, who, prior to the passing of the Act, was entitled to practise as a medical man.

Mr. BEVERLEY pointed out there was a saving clause, providing that nothing in the section in question should apply to legally qualified medical practitioners. That was a saving clause in favour of medical men. There was no evidence that the defendant in that case was a medical man. A medical man in such circumstances could go into Court and produce the Medical Register, and there would be an end of the matter at once, so far as he was concerned. It was not for him

(Mr. Beverley) to prove a negative, and show that the defendant was not a medical man. It was for the defendant to shew that he was, and thereby came within the exemption. If defendant's mouth was closed, he could produce a Medical Register, and also call witnesses if he thought proper.

Mr. WAUGH contended that the onus was upon him (Mr. Beverley) to show not only that the defendant's name did not appear upon the Register, but also that he was not a medical man; he was under no such obligation.

Mr. BEVERLEY : Defendant's mouth was not closed. True, he was not entitled to go into the box and to give evidence ; all he had to do was to produce a Medical Register and say, "Here is my name on the Register. I am a medical man."

Mr. WAUGH said the summons charged him with not being a properly qualified medical practitioner. That was the charge, and the prosecution must prove it. The onus was upon the accuser to prove his charge, and he had not done so.

The CHAIRMAN : We are agreed that the complainant has proved his case so far. We must ask you to proceed.

Mr. WAUGH said, at the outset, then, might he say what the object of the Act in question was ? It was to prevent a person from holding himself out to the public as being a qualified man when he was not ; and then it was to prevent unqualified men from recovering fees. It was not to prevent a person acting as a dentist, but it was to prevent him from holding himself out as a qualified person, not by acts, but by words or letters. He was entitled to do work, but the Act put a disability upon him, saying in effect, "When you do anything you must get your cash in hand, or trust to the honour of those who employ you. We will not help you to recover fees." It was no offence then, for a person to practise as a dentist, although he might not have qualified. It was said the defendant took upon himself a description. His friend proposed to prove it by the door plate, by a circular and by a bill-head for work done. Very well ; there was, as he had submitted, no offence in the doing of the work. He was not going to make any comment upon the methods adopted with the view of securing a connection. Evidently the prosecution was moved by malice. Mr. Willis had had ample opportunity to indulge in such proceedings during the last twelve months had he merely been concerned for the honour of the profession. Here was a man who tried to screw £100 out of someone, and because he could not get it, he had not the courage to go into Court and endeavour to recover it in that way ; but he went about hiring people and setting traps for the unfortunate defendant. The only evidence as to the brass plate being otherwise than at present was that of the clerk, Warhurst. He had put brackets in a certain way upon his sketches. No doubt the youth had made a mistake, but it was a fact that the bracket he represented as occurring

immediately after the name of Mr. Willis never did exist. In the correspondence there was never a suggestion that the defendant had unlawfully used the words "Dental Surgeon," the fact being that those words were intended to describe Mr. Willis, with whom defendant had received his training. But the letters of complaint charged him with using the name of Mr. Willis, showing clearly that at that time the aggrieved parties themselves understood that the words applied to Mr. Willis. He (Mr. Waugh) knew of no reason under the sun why a man should not do this. It was a question entirely for the public. If the defendant liked to trust the public knowing that the law gave him no power to recover his fees in a court of justice, that was his own affair. Mr. Jackson had no intention of leading anybody to believe he was a registered dental surgeon; had he had any such intention, the sign would have read, "Jackson, Dental Surgeon (late with Mr. Willis.*)" On the receipt the brackets were the same as on the sign. So anxious had the defendant been not to offend that upon the first suggestion that there was anything in his printed matter that could give offence to the profession, he issues fresh bill-heads, &c., like the one he (Mr. Waugh) at that moment produced.

Mr. BEVERLEY objected to the sample being put in, on the ground that it was not proved, and that it might have been specially prepared for the purposes of that defence.

Mr. WAUGH said the receipt produced in evidence against the defendant was one of the few used by that young man. The other one entirely did away with any objection. Moreover, upon a fair and reasonable construction of the circular in question, could it be said to be a holding-out that he was a qualified man, or that he had been with a properly qualified man? It was the practice in such instances to put the construction most favourable to the person accused; and, looking at them in that way, it must surely be conceded that the words were descriptive of Mr. Willis and not of Mr. Jackson. The circular simply said the defendant was late with Mr. Willis, dental surgeon, and the one produced was issued subject to the date referred to in the summons. Then they had a great deal said about nitrous oxide gas. No Act of Parliament said such a man should not administer nitrous oxide. If one administered the gas unskilfully, he would be criminally responsible, whoever he was. It was dangerous; the effects of its use entirely depended upon the constitution of the person to whom it was administered, and no amount of knowledge of teeth would warrant its use apart from other knowledge.

The Bench retired with their legal adviser to consider their decision, and returned after a very short absence indeed.

The CHAIRMAN said they considered the complainant had made out his case, and they had decided to inflict a penalty of £5, and the ordinary Court fees, amounting to 6s. 6d., distress to follow non-payment, and in default, one month's imprisonment.

Mr. WAUGH applied for a case upon the points he had raised, and this was granted, the documents, &c., introduced being ordered to remain in the custody of the Clerk to the Magistrates.

REPORTS OF SOCIETIES AND OTHER MEETINGS.

The Odontological Society of Great Britain.

THE ordinary monthly meeting of the above Society was held at its rooms, 40, Leicester Square, on Monday, 6th inst. In the absence of the President and of the Senior Vice-President, Mr. FELIX WEISS took the chair. There was a full attendance of members present.

Messrs. H. G. Read and T. G. Read were elected resident members of the Society.

The LIBRARIAN (Mr. Ashley Gibbings) reported the receipt of the usual periodicals, and the CURATOR (Mr. Storer Bennett) reported that a molar tooth and a molar root had been presented to the Society by Mr. Worsley, which showed marked exostosis and had been removed from the mouth with great difficulty.

Mr. CHARTERS WHITE read a communication on Kingzett's bactericide. After referring to the importance of antisepticism in dentistry, he said that forty years ago creosote, in conjunction with arsenic and morphia, was employed in the destruction of exposed nerve, a method which had not been satisfactory in his hands. Carbolic acid had superseded creosote. This agent combined with arsenic was useful, and when coupled with after dressings of eucalyptus or sanitas oils gave a fair percentage of success. Subsequently, Mr. Charters White had been led to the employment of Kingzett's bactericide with far better results. This material was in fact of 5% mercuric chloride, in combination with 5 volumes of peroxide of hydrogen. This strength is nine times too powerful for use, and should therefore be diluted. To gain a strength of 1 part mercuric chloride in 1,000, a drachm of bactericide would have to be diluted by 6 ounces of water. It is inexpedient to prepare a large quantity at one time, as the peroxide of hydrogen is apt to be split up if kept. As it corrodes, no metal instruments should be placed in contact with the bactericide solution. For syringing out cavities, glass syringes drawn out to a fine point and bent into the required angle may conveniently be used.

The CHAIRMAN remarked that the value of corrosive sublimate

as an antiseptic was well known, but with regard to the peroxide of hydrogen, it was open to the objection that it so readily decomposed.

Mr. W. H. COFFIN remarked that he thought very highly of the bactericide. He would suggest that when dilution was necessary, it should be made by adding peroxide of hydrogen and not ordinary plain water, as otherwise the cavity acted upon would have simply a watery solution of sublimate, the peroxide rapidly decomposing when in contact with water. The 5% solutions kept well, although stronger solutions were apt to deteriorate and become 5% solutions.

Mr. GEORGE CUNNINGHAM (Cambridge) corroborated Mr. Coffin's remarks concerning the value of the combination of corrosive sublimate and peroxide of hydrogen. He employed a 10% solution of the peroxide and syringed out pulp chambers with perchloride, using the rubber dam if a strong solution were employed. The syringe suggested by Dr. St. George Elliott was the one he preferred; the platinum tube was drawn out to a fine point to coincide with the diameter of the canals.

Mr. STORER BENNETT believed there was a preparation of peroxide which was more stable than the ordinary solutions, and called "Robinat." The composition of this was a trade secret. He employed a small hypodermic syringe for injecting which possessed one advantage over the glass syringe suggested by Mr. Charters White, *i.e.*, that it did not break.

Mr. BOYD WALLIS related a case in which a patient having had a tooth filled with gold subsequently suffered from pain and had the tooth drilled into and filled with amalgam. The nerve was destroyed but the pain persisted. The tooth was then extracted, its root filled and replaced. The pain however recurred and the tooth was finally extracted. The specimen was shown and the root seen to be eaten into by pus.

Mr. CHARTERS WHITE thought from the description that the tooth in question was one which he himself had extracted, and it transpired that the patient had been to a Nottingham dentist who had removed the tooth, and finding the end of a Donaldson's barb embedded in it had removed the barb and replaced the tooth filling with gold as mentioned by Mr. Boyd Wallis. Eventually the patient had come to Mr. Charters White.

Mr. DAVID HEPBURN then read his paper upon "Suction Plates, Air Chambers and Artificial Rugæ." Dealing with the true cause

for adhesion between the palate and the plate, adhesion was defined as the attraction exerted between particles of two or more different bodies. Thus even in a vacuum two slabs of glass will adhere, and a slab of glass will have particles of water adherent to it if lowered upon the surface and then lifted. To effect this adhesion the air must be excluded. The retention of plates was further aided by the viscosity of the saliva, and by capillary attraction. The atmosphere presses with a force equal to fifteen pounds upon the square inch, and exerts this pressure in all directions. The "Maddeburgh hemisphere" experiment shows what theoretically ought to obtain when an air chamber plate is fitted, but the special nature of the oral structures frustrates our endeavours to employ atmospheric pressure in the mouth. For as in a cupping glass when the air is exhausted the soft tissues rise into the space, so when an air-chambered plate is applied, the mucous membrane fills it and the *air* chamber ceases to act. When an air-chamber plate is applied two phenomena arise, first apparent adhesion, second, obtrusion of the soft tissues into the chamber—hence air-chambers are practically useless as a retaining force. In some cases Hall's "suction disc" proved useful. Chambers are valuable, Mr. Hepburn believes, as a means of equalising pressure, *e.g.*, an edentulous upper jaw where the remains of the alveolar ridge are covered with soft yielding spongy mucous membrane, while the dome of the palate remains hard and resisting. In reference to artificial rugæ, corrugated strengtheners, Mr. Hepburn said that the gold strengtheners possessed many advantages. They are congenial to the tongue, impart an artistic appearance to the piece, and allow the vulcanite to be cut away so as to afford more tongue room. Corrugation imparts great additional strength, especially if judiciously distributed.

In conclusion, Mr. Hepburn exhibited some very beautiful specimens of artificial rugæ and strengtheners, and explained their construction in detail.

The CHAIRMAN remarked that when a careful model was taken and pains to secure an accurate fit taken, he did not think either an air, or suction chamber was requisite. He had seen trouble arise from the soft tissues growing into the air chamber.

Mr. WALKER thought Mr. Hepburn was right in saying that for edentulous superior maxillæ suction chambers were serviceable. He (Dr. Walker) believed that if air-chamber plates were worn only sixteen out of the twenty-four hours the filling up of the air chamber would not occur.

Mr. KIRBY (Bedford) fitted plates in with a piece of blue manifold paper. This marked down the precise line where there was pressure. He always employed a modification of what was called the Fulsome ridge; instead of making the spurs pass round the whole of the palate, they pass only on the soft tissues on either side.

Mr. BRUNTON (Leeds), following Mr. Fletcher's idea of a number of cavities over the plate, passes a piece of sand paper over the rollers, and thus produces a reticulate surface.

Mr. FAIRBANK deprecated the use of suction plates. He found scraping the palate on each side of the median ridge assisted in supporting the plate, as the tissue was softer there than over the ridge.

Mr. CUNNINGHAM'S (Cambridge) experience pointed to the employment of full-sized plates without suction chambers.

Mr. A. KIRBY (Bedford) then read a paper upon "Electrical Progress and Dental Practice." Mr. Kirby pointed out that the great features in favour of electricity were the ease with which it could be transmitted from place to place and the facility with which it could be used as a motor or an illuminant. The first problem to be answered before it could be so employed was to discover the best mode of storing. All known types of batteries possess drawbacks. After many trials, storage cells were thought to answer best as a means of liberating electricity. As Mr. Kirby was not able to get his storage cells conveniently charged, he sought for another means of obtaining a current for small motors, and after various trials adopted Smee's battery. When once charged it remains in action for a long time—weeks or months, according to the size of the cells and the amount of work they have to do. Practically, the whole of the current used for electric lighting is obtained from steam or water power, by means of dynamos, or machines capable of converting mechanical into electric energy. The main progress in electrical science of the past few years has been in the direction of improving these machines. Recent improvements have special reference to machines which produce a continuous current, or a current always in one direction. However, it is by no means a settled question whether a continuous or an intermittent current is the most effectual. Again, the best means of distributing the current has yet to be determined. The question of electric lighting is intimately connected with that of gas illumination and the coal

supply. Electric lighting cannot compete with gas so long as that can be produced at a price below 5s. per 1,000ft. In America coal gas being much dearer, the electric light has an open field.

Comparing the different sources of supply of electric currents, it is urged that storage cells are daily becoming more used, for lighting and for producing motors, as for tramcars, &c. Large batteries of them are also employed in connection with a dynamo as a reserve force in case of a break-down in the generating machine, thus doing away with the necessity for duplicating apparatus. These storage cells require the use of a dynamo to charge them, thus there is a small amount of loss in the process.

Referring to the use of continuous currents directly from the dynamo, Mr. Kirby remarked that as the current was only obtainable when the machine was at work, and as by the Electric Lighting Act a current of above the pressure of 110 *volts* is not allowed to be taken into a house, their extensive use required the employment of very large conducting wires, or rather, copper sheets or bars, thus causing a difficulty in its distribution. To overcome this difficulty, a different method of supply is now largely used. A current of very high potential is generated, and is carried in large quantity through a very small conducting wire, and converted into a current of lower potential before it is carried into the houses. Thus to transform a continuous current is not easy. A current of the alternating kind is used, which is easily changed from a high to a low potential. In some very large works the original E.M.F. is 10,000 *volts*, and this is reduced at distributing stations to 2,400 *volts*, and finally to 100 *volts*. It is urged against this system that it is attended with waste and loss, the machinery is liable to be overheated, and so destroyed; and finally, that it would interfere with the telegraph and telephone wires. The alternate current is inapplicable to the dental motors in use. The new form of glow lamp (Swan and Edison) is a powerful illuminant for microscopic objects, and owes its lighting intensity to a number of coils of filament, which produce a concentrated light.

Mr. Kirby next considered the electric current as a motor, especially for the burring engine. Certain rules for the construction of motors apply alike to large and small engines. For instance, a certain sized piece of iron should have only a certain number of turns of wire, because if you produce a current beyond

the amount required to produce magnetic semi-saturation, a great part of the extra current is wasted ; hence it happens that small sized motors are wasteful, and if a battery is employed this becomes important, since the charge is expended with unnecessary quickness. Some four or five years ago Mr. Kirby set about making a motor for himself, as he found those in use unsatisfactory. He selected the type first made by Jacobi fifty years ago, and employed for propelling a boat. He adjusted governors to regulate the speed, and an automatic switch to start as soon as the point of the instrument was brought close to the spot at which it was desired to work. At first the power was insufficient, but the modification of the poles corrected this. Those who were consulted about the value of this modified Jacobi thought that it might prove the best plan for small motors. For comparison, however, it was determined to have constructed some motors made on the more recent ring armature principle. The Pacinotti type was chosen. This, although larger than the earlier type motor, has fewer turns of wire ; it takes more current and runs at a higher rate of speed, but does not develop so much power. It thus appears that the older type possesses many advantages.

Referring to the supply of current to small motors, Mr. Kirby thinks it must be of the continuous kind, such as that from a primary or secondary battery, or from a continuous current dynamo, and further, its intensity must also bear exact proportion to the winding used upon the motor. With a moderately high current a slight shock is sometimes felt, but a motor supplied with a very high potential current can only be safely stopped after the current is materially reduced. In conclusion, Mr. Kirby referred to the employment of electric currents for the purpose of destroying the fibromyomata of the uterus, and the more recent suggestion that a high E.M.F. (105 volts), possessed the power of destroying cancer cells, while it did not act deleteriously upon the normal structures of the body. This force was equal to that required to give a twenty candle power illuminating electric light.

After a brief discussion the meeting closed with the usual votes of thanks. The Chairman announced that the next meeting would take place on June 3rd, when a paper would be read by Dr. Ferrier, F.R.S., On some Relations of the Fifth Nerve, and casual communications read by Mr. Scott Thomson on a Case of Irregularity, and by Messrs. Cunningham and Robinson, On the Occurrence of Crystal-forming micro-organisms in the Mouth.

The Odonto-Chirurgical Society of Scotland.

ANNUAL DINNER.

THE Annual Dinner of the Licentiates in Dental Surgery, and Members of the Odonto-Chirurgical Society, was held in the Balmoral Hotel, Edinburgh, on the evening of 3rd May. Professor Sir Douglas Maclagan presided, and Dr. Williamson, Aberdeen, officiated as croupier. Among those present were Dr. Peel Ritchie, President of the Royal College of Physicians, Dr. Gillespie, Mr. R. Reid, Dr. John Smith, Dr. Clouston, Dr. Littlejohn, Mr. W. J. Ford, Mr. Lindsay Mackersy, W.S., Mr. J. B. Sutherland, S.Sc., Mr. J. S. Trainer, treasurer, Royal Infirmary, &c. Apologies were intimated from Dr. Joseph Bell, President of the Royal College of Surgeons, and Surgeon-General Fasson.

The CHAIRMAN proposed the loyal and patriotic toasts, which were duly honoured, Major J. B. SUTHERLAND replying for the "Navy, Army, and Reserved Forces."

The CROUPIER, in submitting the toast of "The Dental Diploma," said he thought it was one which in due time would go out of fashion, not because the diploma itself would go out of fashion but because it would not be necessary to refer to it, particularly at such gatherings as theirs, just in the same way as the medical diploma was not now-a-days proposed as a toast. The public required to be very much educated in respect to the dental degrees. They did not know the meaning of L.D.S. He hoped in course of time that would pass away, but until the public were better educated it was of little use to think of higher degrees in dentistry. If they wanted to raise the profession the dental diploma was essential, but he advocated also that members of the profession should go in for medical and surgical degrees, because the whole profession of dentistry was founded on medicine and surgery.

The toast was cordially pledged.

Dr. PEEL RITCHIE gave "The Odonto-Chirurgical and Sister Societies." He said, that having just heard the remarks of the Croupier regarding the importance of the dental diploma, it followed that having attained the position of diplomat it was necessary they should have some opportunities of meeting together and expressing their opinions, and discussing various points of interest connected with their profession. In that Society they had opportunities of prosecuting the scientific part of their pro-

fession, and also of mixing together for inter-communication on professional subjects, and for assembling in a social manner as at present. He was glad to know that the Society was in a very flourishing condition. He included in the toast the Odontological Society of Great Britain and the British Dental Association, and coupled it with the name of Mr. Biggs, president of the Odonto-Chirurgical Society.

Mr BIGGS, in reply, said that a great deal of the dental energy, which was being displayed at present, originated from the Odonto-Chirurgical Society. It was the nucleus by which, in the formation of the British Dental Association, the men of ability of Scotland were get-at-able, and they came forward and lent all the aid that was in their power. He did not know if he was right in saying that the Edinburgh Dental Dispensary or Hospital in Drummond Street was originated by men who were afterwards the leaders of the Odonto-Chirurgical Society when it was formed, and who were the men who attempted to form it before it really came into existence, and he did not know whether that hospital was the first in the United Kingdom or not—he rather thought it was, though he had a discussion with Mr. Ash, of London, on the subject and they differed about it. But this thought came into his mind when he entered the new building connected with the infirmary—that it was a marvel to him how such a small beginning should have such a glorious ending developed to such an imposing extent. He expressed indebtedness to the medical profession of Edinburgh for the kindly manner in which they came forward at all times to lend their assistance in advancing the dental interests of Scotland.

The CHAIRMAN proposed the toast of the "Edinburgh Dental Hospital and School," which, he said, might be regarded as the toast of the evening. Although it was localised in its scope and did not embrace so much of the territory of Great Britain as the Associations of which they had been hearing, he thought it was worthy of that distinction. It was a subject not of local, but of general, interest to them. He gave an interesting sketch of the history of dental teaching and of the dental school, and said that on his resignation of the office of dental surgeon to the Royal Infirmary last year, Dr. John Smith drew the attention of the managers to the inadequacy of the capabilities of such an office for the teaching required at the present day, and suggested some more complete organisation for that purpose. He, at the same

time, suggested both to the Royal Infirmary and the Dental Hospital the immense advantages that would mutually result from some affiliation or connection between these bodies—the result being that after several conferences and mature deliberation the association of the Dental Hospital, as an adjunct or accessory to the Royal Infirmary, was accomplished. It was in that position that they now stood. They talked of evolution, and they invoked the name of Darwin. He thought they would see there an example of evolution of the most marked and decided view, about which there was no dispute practically, and around which no theoretical controversies raged. Sir Douglas then referred to the philanthropic character of the institution and its value to the community of Edinburgh, and also to its practical value in increasing the efficiency of members of the dental profession. He attached great importance to the statistics given in the latest report, showing that while the number of patients had increased the number of extractions had been proportionally reduced. That was an indication of the scientific advance of the dental profession and of the importance of conservative surgery, whether applied to teeth or to limbs. He expressed his pleasure, as chairman of the Medical Managers' Committee of the Royal Infirmary, of having a part, however subordinate, in carrying out the affiliation that was now complete, and he sincerely trusted that in the new Dental Hospital many would receive much benefit and relief from suffering, and many be taught to practise that important branch of the profession to which they belonged. He passed a high encomium on Mr. W. Bowman Macleod, dean of the School, who had done so much in promoting the interests of the School, and with whose name he coupled the toast.

The DEAN, in replying, claimed that the Dental School had as wide a scope as the Associations which had already been pledged, for although it was local in its name and habitation it had in its teaching pupils from Cornwall in England to Inverness in Scotland, and it went across the Irish Sea to embrace its students, so that it could not claim a less area of effectiveness and usefulness than the Odonto-Chirurgical, the Odontological, and the British Medical Association. To show the extent and nature of the progress of the school at the time when they first went to Chambers Street, he stated that during the first year they were there the number of their patients was 4,500, but last year they had increased to 8,148, and during the ten years they were in these

premises 58,967 patients attended. That number did not by any means show the extent of their operations, but simply the number of individuals on whom they operated. They had during that period received in the shape of contributions £1,734, of which £1,123 had been contributed by the dental profession and the patients connected with the hospital, leaving somewhere about £600 as contributions from the general public towards the institution. That showed that the dental profession not only took an active working interest in it, but contributed very much pecuniarily to its success. If they had depended entirely on the public for sustenance they would have been starved out of existence long ago. The funds had been devoted, not to the remuneration of the gentlemen who from day to day instructed the students in the progress and science of dentistry, but to the patients of the hospital. They had in the past proved that they had the interests of the institution at heart. They not only ameliorated suffering to the poorer classes, but trained up for the benefit of the richer classes a body of practitioners who would give better services in the future than ever their forefathers received. He thought, therefore, they might claim from the public a little more generous support than they had hitherto received. He referred to the ample character of the accommodation and appliances in their new premises for present needs, and thanked the managers of the Royal Infirmary for the share they had in procuring for them their benefits. He trusted that in the near future they would have attached pupils to that hospital, who would receive their entire dental education there instead of having them half at a private workshop and half at a medical school. They proposed that they should take articled pupils in connection with the hospital, and train them in everything pertinent to dentistry, mechanical and practical. They would in that way turn out more perfect students and practitioners than ever had been turned out of any school in Great Britain, and they only required hearty support in the future as in the past, to enable them to carry out these proposals.

Dr. JOHN SMITH, in giving the toast of "The Royal Infirmary," pointed to the close connection which had existed in the field of medicine and surgery in that institution, and to the way in which it had fostered the cultivation and advancement of every department in these branches.

Mr. W. J. FORD replied.

Mr. CAMPBELL proposed "The Licensing Bodies," and spoke of the difference between the dentistry practised thirty years ago and now. It was, he said, a point of controversy whether dentists should be satisfied with the dental licence. For some time back practitioners, who had sent their sons to the dental schools, had taken good care that they were qualified medically as well. On the continent of Europe, in the colonies, and also in the United States they were raising the standard of dental education. So much was this so that at little more time and expense they might have the medical qualification also.

Dr. GILLESPIE replied and also spoke of the great progress which the science of dentistry had made within the last twenty years.

The other toasts were "The Chairman" by Dr. Littlejohn, and "The Croupier" by Mr. Rees Price.

Between the toasts members of the company sang songs which were greatly appreciated.

Opening of Edinburgh Dental Hospital and School.

THE inauguration of the New Dental Hospital and School in Lauriston Lane, Edinburgh, which has been remodelled and furnished at a cost of £650, took place on Saturday forenoon. In close proximity to the Royal Infirmary, the hospital is advantageously situated for students who may be desirous of sharing in the practical instruction of both institutions, while even a more important element in its location is the fact that its position is one of convenience to not a few who may seek the treatment which it dispenses.

On the ground floor, and almost opposite the main door, there is a retiring room for students, with lavatory adjoining. The patients' waiting-room is immediately at the entrance to the large hall, or what is known as the stopping department. This hall is 50 feet long and 25 feet broad, and is excellently lighted from the roof and sides. At present there are twenty chairs, but there is accommodation for fifty, and these will be gradually provided as the number of students increases. The operating arrangements here are of the most improved and modernized kind. Saliva ejectors and burring apparatus are provided, to which hydraulic action has been applied. The heating of the hall, as well as of the other rooms, is arranged in the form of hot-water pipes laid

from the furnace room at the south end of the building. The first floor contains the extracting room, the anæsthetic room for the administration of chloroform, gas and other anæsthetics, and the impression room. In the next floor there is the board-room, in which are a museum containing pathological and anatomical representations, and a library. A mechanical laboratory has also been fitted up in an apartment adjoining the board-room. In the hospital there is ample accommodation for about sixty students, and this limit is expected to be reached in a few years. Altogether, it may be said a training school of its kind has been furnished equal, if not superior, to any in Great Britain. The directors, in order to establish a thorough training school, intend to have attached to it articulated pupils, who will pass their professional four years' instruction within the school, receiving their mechanical tuition as well as their medical instruction during their four years' residence.

The inaugural ceremony was held in the large hall, and there were present :—Sir Douglas MacLagan, Dr. John Smith, Dr. Littlejohn, Mr. W. Bowman Macleod, Mr. G. W. Watson, Dr. Reid, Mr. J. Dall, Mr. Andrew Wilson, Mr. Austin Biggs, Mr. Walter Campbell, Mr. L. Mackersy, Mr. Trainer, &c. Sir Douglas MacLagan, in declaring the hospital open, said he was quite certain no establishment could be fitted up better for the purpose than that in which they were then assembled. He congratulated the people of Edinburgh, of Scotland, in fact, and his brother managers of the Infirmary in having such an admirable appendage to the larger institution. He hoped the bright sunshine which now graced the inauguration would be an omen of prosperity and light to the subject of dentistry there.

Students' Society of the National Dental Hospital.

THE last ordinary monthly meeting of this Society was held on Friday, May 3rd, at eight o'clock p.m., SIDNEY SPOKES, President, in the chair.

The minutes of the previous meeting were read and confirmed. Miss Day was elected a member of the Society.

Casual Communications.—Mr. CLARK showed a model of a left upper first bicuspid root, in which the nerve was still alive and aching. As patient objected to having it destroyed by taking gas

and killing it with a barb, Mr. Clark fitted a German silver collar round the root, and applied Baldock's paste. The treatment was successful.

Mr. T. G. READ mentioned a similar case.

Mr. FISK shewed a curious left lower wisdom tooth, which had seven cusps, one of which was more than $\frac{1}{8}$ inch in height, and was curved backwards, like the horn of a rhinoceros. Mr. Fisk also mentioned the case of a patient who complained of partial loss of sensation on left side of tongue and gums. One tooth only—a molar—was or had been standing on this side, but the crown had been broken off by another dentist. Mr. Fisk removed the roots, and sensation returned within five minutes. Roots shewed slight absorption, and the apical foramina were exceedingly large.

The PRESIDENT called upon Mr. ALLNUTT for his paper on "Anæsthetics," which proved to be of a very interesting nature. After mentioning several means employed by the ancients for the prevention or alleviation of pain, he proceeded to trace the history of nitrous oxide, ether and chloroform. He then dealt with the physiological effects and mode of administration of N_2O ; mentioning the several phenomena and the symptoms of true anæsthesia. He then dwelt on the dangers incidental to the administration, especially syncope and asphyxia, giving the symptoms of each, and the different modes of treatment.

The paper having been discussed, the meeting adjourned till Friday, June 7th, when Mr. Fisk will read a paper on "Dental Education."

REVIEWS AND NOTICES OF BOOKS.

TRANSACTIONS OF THE ILLINOIS STATE DENTAL SOCIETY, at the twenty-fourth Annual Meeting. Cairo, 1888.

DENTAL Societies in the United States were first organised about fifty years ago, the eldest surviving one, born at Cincinnati in 1844, and a score or so of local and national associations started before this generation, being senior to our own Odontological Society. About the fortieth American Society in order of formation on record was the Illinois State Dental Society, which already is just celebrating its "Quarter Centennial Anniversary" at Quincy as we go to press. This flourishing body is an excellent type of

those territorial organizations which, like our Association,—concerned with both the political and scientific interests of the profession,—have done so much and will do more to elevate dentistry in the great republic.

Its officers are widely known, not a few of their faces being familiar to Englishmen. Dr. Wassall, for several years Secretary, attended our meeting last year in Ireland; and past presidents, Harlan and Dean, have been with us.

Perhaps the best literary work of bodies meeting only once a year is embodied in the Reports of Committees appointed to collect statistics bearing on certain points of interest; the scientific method of research so successfully inaugurated—but insufficiently appreciated—in this country by the British Association. A step further is taken by the Illinois Society in instructing a standing committee to annually advise its members on the general literature of pathology and therapeutics, the books to purchase and read, and we trust to *avoid*—as we had melancholy occasion to point out in our March number respecting a recent American “text-book.”

The committee on dental science report very cautiously on “immediate” root filling, and adversely on “Implantation.” They favour the views of Bodecker and Heitzman, as against Younger, as to the “revivication” of dental tissues, but are struck by the large percentage of apparent successes recorded by those who have carefully tabulated their results; the numbers showing—in cases suitable for the operation performed within fifteen months—only 20 per cent. of failures.

Conservative pulp treatment is only advised for young teeth or under very favourable conditions; extirpation and root filling antiseptically being considered on the whole the proper course for adults or cases at all doubtful. Whole gold crowning is warmly commended for posterior teeth, as almost invariably better than large fillings in cases of extensive decay. The committee on “Inventions,” &c., enumerate many novelties with which we are now more or less familiar, but especially advise the trial again for base plates of the much purer aluminium now obtainable, as being stronger and more durable in the mouth than the comparatively impure metal formerly used.

The presidential address by Dr. Rohland deals largely with popular instruction on dental hygiene and the proposed introduction into elementary education of systematic courses on dental

anatomy and therapeutics, as calculated to second our efforts against degeneration and suffering, and to raise the position of the profession.

The papers read before an American meeting invariably include a certain number of the well-known "text-book" variety, which, with amazing solemnity, are patiently received and "passed." Adverse criticism is rare, silence not less fatal than ridicule being accorded to personal dulness. In curious contrast to this we note that the members of a committee whose report may be considered defective or misleading are collectively not only keenly censured but roundly abused—a verbatim report moreover of the whole being fully set forth with all the pomp and splendour of typography that transatlantic publishers can attain to. This is done to encourage the others, the reporting committee presumably having abdicated. But in general it is incorrect that an American audience has to be requested not to shoot a man who is doing his best.

The papers read and printed sumptuously in the volume before us embrace a wide range of theory and practice; the latter category being certainly the best represented. Dr. Ames has a lively and most original article on 'amalgams, which earnest "plasticians" will find very diverting. The author is enamoured of "amalgamated platinum" which is so plastic that it is *permanently* so and never sets at all. The use of this engaging compound appears to be to mix with other alloys whose setting may require to be retarded or modified. The paper bristles with practical points on the manipulation of the various amalgams, and describes not very conclusive experiments on the volatilisation and solution in the mouth of mercurial alloys which, if only decisive, would have the highest interest; but we confess that on the whole Dr. Ames' methods refuse to crystallise in the mind as obstinately as his liquid platinum.

A comprehensive paper on the wide subject of "Operative Dentistry" by Dr. Ottofy served to open a discussion in which good and capable operators, as usual, expressed the most widely divergent views as to means and methods.

A thoughtful and suggestive contribution is made by Dr. Johnston on the treatment of "inflamed pulps," pointing to the best remedies at our disposal for the alleviation of pain. He strongly recommended, on what appear to be reasonable grounds, the following application for devitalising exposed pulps, which can be applied immediately even when considerable inflammation is

present : Arsenic 1 part, cocaine 4 parts, lanolin 5 parts. Several members, from experience, endorsed the value of this formula.

An exceedingly useful paper on the much-neglected subject of "making and tempering instruments" elicited an interesting discussion.

The elaborate operations our American *confrères* love to demonstrate to and upon each other on such occasions are of course fully described, for future reference, by the appointed "Supervisor of Clinics," who reports a very serious case of cocaine exhibition for extraction in the following cheerful manner :—

"The toxical effects of the remedy were beautifully shown to a limited extent, and gave him the opportunity of using some of the antidotes of this powerful drug. I said, we will use cocaine and get the toxical effects. Well, we got them considerably." It is only fair to add that he explained that in his private practice he would not have given anything stronger than whiskey. An opinion was expressed that the injection of cocaine retarded the repair of tissue after an operation.

The all-too-meagre record of the routine business deliberations of the Society are certainly not devoid of a certain interest. The narrow confines of the State of Illinois being presumably oppressively small, we regret to learn that the question of holding an annual meeting on board a Mississippi river steam boat was found impracticable.

At one sitting the Society adopted a resolution in favour of Free Trade—at least as applying to dental goods ; another for higher professional education ; determined not to selfishly seek legal exemption from jury service ; adopted a report of the committee on the infractions of the code of ethics, to the effect that no violation of the code had been brought to their notice ; and having opened with prayer a meeting so conspicuous for self-denial, patriotism, and piety, most appropriately adjourned "to meet at the Rink to take tea with the ladies of the Episcopal Church, who have invited us."

APPOINTMENTS.

A. HOPEWELL SMITH, L.D.S.Eng., has been appointed House-Surgeon at the Dental Hospital of London, *vice* F. A. Harsant, L.D.S.Eng., resigned.

J. CHARLES STOREY to be Honorary Dental Surgeon to the Hull Royal Infirmary. No appointment has previously been made.

ANNOTATIONS.

WE wish to call special attention to the new rules that were proposed in March by a special sub-committee appointed by the Representative Board to consider and passed by the Board in question at their May meeting (see p. 259). The rules are as follows :

Provisional recommendations of Sub-Committee on Mr. Dennant's motion appointed by the Board, December 1st, 1888.

That the full title of a communication intended for the General Meeting be sent to the hon. secretary, if possible, at least six weeks in advance ; that an abstract of every paper offered shall be in hand a fortnight before the meeting, to be accompanied by the paper itself when proposed to be read in full or in part.

That each abstract and paper shall be submitted to one or more "Special Referees" selected by the Publishing Committee from a body of Literary Referees consisting of ten members or others elected annually at the General Meeting. The Publishing Committee to decide upon the report of the referees as to the acceptance of papers, and whether to be read by abstract, in full, or otherwise.

That the reading of a paper shall not exceed thirty minutes, nor of an abstract ten minutes ; and that speakers in debate and authors in reply shall be limited to ten minutes each, except by the express wish of the meeting.

That when the number of papers before the meeting is greater than in the opinion of the majority can in sequence be duly considered, the presiding officer shall resolve the meeting for a specified time into two or more sections, before which the business can proceed simultaneously ; such sections, however, to have no powers or functions not specially delegated to them.

It is plain that something must be done in the way of condensation, and the above scheme seems sensible and practical. We hope that gentlemen who compile very long papers and read them in abstract will kindly condense them within the limits of ten pages or so before sending them for publication.

THE Annual General Meeting of the Odonto-Chirurgical Society was held at the rooms in the new hospital premises, 5, Lauriston Lane, Edinburgh, Dr. W. R. Williamson, the president, in the chair. The secretary announced the names of nine gentlemen whose nomination for membership had been approved by the Council. The report of the treasurer, Mr. G. W. Watson, showed the reserve of the Society for the year to have been £30, which, with moneys in hand and a bank deposit, made a sum total of

£147. After deducting the year's expenses, in which printing, stationery and rent of rooms bulked largely, a sum of £113 was left as representing the funds of the Society. Mr. Shiach, of Elgin presented to the Society's museum a specimen of carved bonework—a gold plate mounted with porcelain incisor teeth of French manufacture—and two or three sets of porcelain teeth of very early date. The president made a communication on the subject of porcelain inlays (Howes' method). The inlays are circular and of different sizes and shades, burrs being sold with them exactly corresponding in diameter. An inlay is selected approximating the cavity in size, and with the corresponding burr the cavity is trimmed to fit it, and the porcelain secured in position with cement. Mr. Andrew Wilson exhibited specimens of the head and jaws of the sargus or sheep's-head fish, and made a few remarks upon them.

MR. G. W. WATSON read a paper on the micro-organisms of the mouth, and their association with disease. The paper was of too elaborate a nature to abbreviate. It dealt largely with the various forms common in the mouth, and was made very interesting by a large number of photo-micrographs thrown upon a screen by means of a lantern, or printed and mounted in the usual way. Some were taken direct from the mouth, others had been separated out and cultivated. A short discussion followed, after which Dr. Williamson resigned the chair in favour of the new president, Mr. John A. Biggs, who acknowledged the honour done him. In the evening the conjoint dinner of the Odonto-Chirurgical Society and the Licentiates in Dental Surgery, was held in the Balmoral Hotel, Sir Douglas MacLagan presiding.

THE current number of our Parisian contemporary, *L'Odon-tologie*, contains some papers of practical interest, which we present in a summarised form to our readers. In discussing the use of a mixture of plaster and corrosive sublimate for capping pulps and filling canals, M. Paul Lehr states that he uses these agents in preference to iodoform cloth, because this latter—a preparation of his own—is open to objection on account of its disagreeable smell. The method of employment he gives as follows: The cavity having been first prepared, it is washed out with a piece of amadou soaked in a solution of corrosive sublimate (1 in 1000), then dried, and when the pulp has ceased

bleeding it is covered with a paste consisting of plaster and corrosive sublimate (1 in 1000). This paste is pressed lightly against the top of the cavity with a very dry piece of amadou—the amadou having the double advantage of exercising an equal pressure and of absorbing the excess of liquid contained in the plaster, which then solidifies. After the application of the paste, the cavity is again cleared out, taking care to leave a protecting layer over the pulp. It is dried with the hot-air syringe, and covered with a solution of mastic dissolved in ether. M. Paul Lehr states that he has followed this method with satisfactory results since September, 1888, using horn spatulas and spoon-shaped excavators made expressly for him by Messrs. Ash & Sons: The horn-excavator is used only to remove the excess of plaster from the cavity before it hardens.

In discussing the stopping of canals, M. Paul Lehr states that in the case of teeth recently decayed, he completes the operation at one sitting; but that teeth that have been neglected for some time require two or three dressings. The cavity is dressed with cotton wool, pressed dry into the cavity—not too hard—and then impregnated with an etherised alcoholic solution of corrosive sublimate (it is not so easy to manipulate if impregnated first). The following is the formula of etherised alcohol of bi-chloride of mercury: Bi-chloride of mercury, 1 gramme; alcohol at 96°, 250 cm. cubes; ether at 65°, 250 cm. cubes. He measures by volume instead of weight, and prefers the proportions of 1 in 500. His first experiments were made with aqueous solution, also 1 in 500. The ether and alcohol possess the advantage of dissolving the fatty bodies and clearing the cavities that the probe has not been able to reach. To clear the canals completely the access to them must be made as easy as possible, and enlarged with the drill. Frequent washings are necessary to carry away the *débris* that the drill may push beyond the foramen. The probe is used from time to time to guide the operator and enable him to work more surely. Cotton impregnated with carbolic acid has been tried, but without the success attending plaster, which fills all the interstices and adheres to the walls of the cavities.

THE combination of plaster and sublimate was discussed at the Dental Congress at Dresden in 1887, and objection was made to the sublimate on the ground that it sometimes discolored the teeth,

but this accident, which M. Lehr has not yet observed in his own cases, he thinks may be due to the solutions being too concentrated or to the sublimate coming into contact with metal instruments. The alcoholic solution of 20 per cent. used by M. Adolphe Witzel certainly destroyed all the micro-organisms, but the sublimate is corrosive to such a degree that it must have inevitably affected the tissues beyond the foramen. The cavity having been well cleared with the drill it is washed with water (luke-warm is better than cold water); it is then dried with cotton, and any organic matters that may still remain are withdrawn with the nerve-extractors or probes. A nerve-extractor is then wrapped in cotton, dipped in etherized alcoholic bichloride of mercury, and with this the canal is cleared. If it is not possible to get down to the foramen with this, a drop of the ether solution will get there. Half the success of the operation depends on preventing any organic matters penetrating beyond the foramen. The canals being well-cleared, they are again dried and twice injected by means of a Pravaz syringe, each time assisting the evaporation of the ether and alcohol with the hot-air syringe. Solution for injecting into the canals: Bi-chloride of mercury, 0.20 grammes; mastic, .10 grammes; ether at 65°, alcohol at 96° ââ, .50 cent. cubes. If the plaster cannot be made to fill the canals, which are sometimes too narrow, the walls are (if the cavity has been well dried), at least covered with a good antiseptic coating. They are then filled with the paste of sublimate. Plaster, q.S; aqueous solution of corrosive sublimate, 1-500, q.S. The excess of plaster must be removed; it is then dried with the hot-air syringe and obturation is completed either with oxyphosphate or copper amalgam. Plaster must not be left in a cavity destined for cimentum or amalgam, as it injures the solidity of the filling. The dam facilitates the work, but in the case of roots, where its use is impossible, cotton wool round the gums will absorb the liquids that flow from the cavity. Copper amalgams are recommended because they are in themselves antiseptic, and they also best withstand caries at the neck.

ROYAL COLLEGE OF SURGEONS, ENGLAND.—The following candidates passed the Examination for the Diploma in Dental Surgery, viz. :—Arthur Black, 8, Harley Gardens, W. Brompton, S.W.; Arthur Reginald Colyer, Hazeldene, Thurlow Park Road, Dulwich; Charles Walton Crassweller, 6, Ashmore Road, St.

Peter's Park, W. ; John Dunlop, 1, Portland Road, Kilmarnock, Scotland ; William Robb Elphinstone, 41, Hunter Street, W.C. ; Richard Sydney Newman Faro, 82, Upper Gloucester Place, Dorset Square, N.W. ; Edgar Albert Hector Field, 30, Lorrimer Square, Walworth, S.E. ; Arthur Fogg, Sleighbury House, Leek, Stoke-on-Trent ; Frederick Lonnon, 77, Denmark Hill, S.E. ; John Norris, 159, Kingsley Road, Prince's Park, Liverpool ; Charles Edward Peckover, 14, Pavillion Parade, Brighton ; Frank Constable Porter, 2, Richmond Terrace, Clapham Road, S.W. ; William Rushton, 57, Devonport Road, Shepherd's Bush, W. ; Samuel Day Timms, 54a, Westbourne Street, Pimlico, S.W. ; Herbert Williamson Wedgwood, 293, Friern Road, East Dulwich ; Robert Ernest Wood, Horeham Manor, Sussex.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.—During the April sittings of the examiners, the following gentlemen passed the First Professional Examination for the License in Dental Surgery: John Thomas Jameson, Newcastle-on-Tyne ; John Cromar, Aberdeen ; Alexander Wilson, Glasgow ; and George William Stringfield, Sussex ; and the following gentlemen passed the final examination, and were admitted L.D.S., Edinburgh : Albert Maurice, London ; Arthur Percy Stocken, Ealing, Middlesex ; Alfred Edward Donagan, Cambridge ; George William Stringfield, Sussex ; John Pryse Roberts, Kirkdale ; Henry Mallet, Devonshire ; Frederick Page, Edinburgh ; John Crostwhaite M'Namara, Cumberland ; Henry Hepburn Chapman, Edinburgh ; John Thomas Craig, Warwickshire ; and Thomas Jackson, jun., Preston.

FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At the April Sittings of the Dental Examiners, the following gentlemen were admitted Licentiates in Dental Surgery :—Luther Watson, L.R.C.P. and S.Edin., L.F.P.S.Glas. (Burnley, Lancashire) ; James Stewart (Glasgow) ; Harry Austin Armitage (Manchester) ; Samuel Frank Elmitt (Newcastle-under-Lyme). The following passed the First Dental Examination :—Alfred B. Stoner (Brighton) ; William Geekie (Oxford) ; Horace H. Elliott (London).

It is satisfactory to learn that the annual congress of German dentists recently held at Hamburg was attended by about seventy German practitioners, besides members of the profession from

Austria, Holland and the United States. The chief subject discussed was the method to be adopted to insure increased dental efficiency. A complete education at a German gymnasium, the period of study extending from four to six, or eight terms, was proposed. Unanimity on the point not being arrived at, a committee of five members was elected for the purpose of ascertaining the opinion of all German dentists on these points, the report to be ready for next year's congress, which, it was decided, should be held at Berlin in April next. Of the scientific papers read the most interesting were those of Dr. Fläche (Bremen), in regard to the use of electricity as a dental medium; Dr. Brandt (Berlin), who exemplified the newest methods of closing defective palates; and Dr. Sachs (Breslau), who reviewed the materials in use for filling defective teeth. The first-named lecturer added interest to his subject by practical demonstration with a human skull, the teeth of which he filled with various materials, completing the set with artificial specimens. Interesting debates followed, and, as these were reported, the proceedings of the congress, which will be available to foreigners in the profession, may be regarded as an international service rendered to suffering humanity.

MR. PEARSALL has, for the assistance of the Registrar and also for the Irish Members, compiled an Irish Register, that is to say a complete copy of all the entries of practitioners in Ireland in the Dentists' Register, 1889—a convenient plan, which other branches might imitate with advantage.

IN the forthcoming *Conversazione* to be given by the Royal College of Surgeons, it ought not to be forgotten that Dental Licentiates can procure cards of invitation for themselves and a lady by application to the Secretary.

IN the paper on "Temporary Fillings" by Walter Harrison, L.D.S.Eng., D.M.D.Harv., in our last issue (line 27, page 203), the words "or rubbing over the sensitive place" should read "or painting the sensitive place with a solution of the gutta percha and chloroform (which is readily made)."

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our Correspondents.

Cocaine.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—In your summary of cocaine, you neglect a most important point. You limit the dose, but, like so many others, you say not a word of the time that should be taken over the injection.

I had hoped to have made a point of this in a paper read at the Southern Counties Branch at Southsea, on the "Administration of Cocaine." But since then, as before, no one mentions their method of injection, as to time.

According to my experience, the time one takes over the injection is of far more importance than the quantity of the drug weighed out for use.

In the earlier days, I had some alarming symptoms from as small a dose as half a grain, but then the drug was injected, dissolved in about six minims of waters, distributed half on either side of the root, the whole taking about half a minute or a minute to introduce. I then waited from five to ten minutes for anæsthesia.

In many of these cases, after the lapse of three to five minutes, there were some of the various symptoms which have been so often described. This led me to try the effect of taking more time over the injection, and regulating the quantity of cocaine according to the requirements of the case. I dissolve half a grain in about six minims of water, and inject about one minim on either side. In two or three minutes I inject half a minim more on each side. After five minutes from the last injection, if there is no sign of discomfort, and the gum and alveolus are not thoroughly numbed, the remaining three minims are injected in the same way. But if there are any signs of distress I do not use the remaining three minims.

If after about ten minutes from the commencement there is not complete local anæsthesia, and if there are no disagreeable effects, I mix another half grain, and inject that in the same way, only using as much as is necessary.

The result is that often not more than a quarter of a grain is required seldom over half a grain, and very rarely one grain is used, and I have not had one alarming case when the above caution has been taken; whereas, before, I met with the same troubles that have caused so many to condemn this most useful drug.

In conclusion, I claim three advantages for this slow method. 1st. The patient will bear a larger quantity of cocaine, when slowly introduced. 2nd. As the symptoms always come on quickly, it

enables one to judge what quantity may safely be injected. 3rd. The local anæsthesia is more complete.

I should be glad to hear if any others have tried the slow method of injecting cocaine, and, if so, with what result.

I am, &c.,

ARTHUR KING, L.D.S.Eng.

37, *Spital Street, Guildford.*

"Dudley Buxton on Anæsthetics."

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—In the course of a kindly and courteous criticism with which you honoured my manual on anæsthetics, your reviewer has inadvertently been led to misrepresent my views upon a highly important matter—the preparation of a patient for the anæsthetisation. I trust you will permit me to quote a few lines from my book to make clear what I really intended to teach.

On page 243 of your last issue your reviewer writes: "With regard to the best time for giving anæsthetics, Dr. Buxton lays down the usual rules, with this exception, that he does not approve of administering after a prolonged fast, for instance, before breakfast, a time which has been usually regarded as especially favourable, because it combines the advantages of an empty stomach with the refreshed and rehabilitated condition of mind and body consequent upon a good night's rest, and last, not least, because it does not allow any opportunity for a long period of nervous apprehension."

I may remark that even had I made an exception to "the usual rules" wherever they are to be found, and I have not done so, the whole force of the reviewer's contention rests upon the assumption that the patient will enjoy a good night's sleep before the operation morning, a consummation, although devoutly to be hoped for, yet not often attained. I will now quote from pages eleven and twelve of my book. I add the italics:

"The effect of anæsthetisation upon the robust may be considered trifling and transient, yet it is not so when the person to be anæsthetised *is an invalid, and either weakly or highly neurotic.*" "It is then inadvisable, unless over-riding circumstances should exist, to give an anæsthetic after a prolonged fast, for instance, in the early morning *before food has been taken.*" "It is well then to select the period of greatest vital activity, which is found in most persons *in the morning or early afternoon.* Arrange *for a light meal of soft and easily digested matters to be taken three hours before the surgeon should arrive.*"

The above quotations, I submit, prove that I have stated what I believe to be correct and what I am in the habit of teaching, *viz.,*

that for the strong and robust it matters but little when the anæsthetic is given ; for the weakly the early morning, say 8.30 or 9 a.m., is the best time, but it is very essential that they partake of light food three hours before the operation. My excuse for troubling you is that I believe the practice your reviewer seems to advocate, namely, anæsthetising patients with their stomachs quite empty and their systems lowered by a fast of eight or ten hours, is one which is detrimental to the patient, and should therefore be discountenanced.

I am, your obedient servant,

DUDLEY WILMOT BUXTON.

82, Mortimer Street, W.

Dental Education.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—Mr. Fothergill has advisedly reminded us that the public good is the only valid criterion by which we can rightly judge of the desirableness or otherwise of any proposed changes in the curriculum ; and we are, I think, particularly indebted to him for noticing this point, since the writer of the article in the *British Medical Journal*, discussing the subject, as he did, entirely from the professional or subjective point of view, seems to have altogether ignored it.

All, I imagine, will admit that it would be decidedly for the public good that such gross quackery as described by Mr. Renshaw in the letter almost immediately following Mr. Fothergill's, should be absolutely put down ; yet we have all, I think, by this time learnt, that prosecutions alone are powerless to do it, and many of us will doubt whether the moral pressure suggested by Mr. Renshaw, would have the effect he hopes. This kind of practice can only be stopped in the same way as (speaking generally) it has been in the medical profession, viz. : by supplanting the quacks by a host of scientifically trained and properly qualified men, who will, after a time, make it impossible for many of them to earn a living. This obviously cannot be done in a few years : it will take probably two or three generations to effect it. If, however, it be, as I believe, the true and only solution of what we may call the quackery problem, it follows that any increased stringency in the examination which would tend to restrict the number of men entering the profession, would be more or less detrimental to the public interest in the way indicated. Now making the first and second professional examinations for the conjoint diploma compulsory on dental students would, I believe, be such a restriction, and, like Mr. Fothergill, I would protest very earnestly against it.

But the question may be argued and the same conclusion reached from two or three other points of view. Take the practical side.

All are probably agreed that the practical part of the examination needs developing, and that both a more systematic and practical course of instruction in mechanical work and also an examination in this subject are very much wanted. A man who has just qualified under the present regulations, finds himself perhaps required to fit a difficult partial vulcanite denture to the mouth. It is an almost entirely new experience for him. Nothing that he has done in his two years in the work-room is like it, for striking up metal plates is quite a different kind of work, and bone work, which resembled it more closely than any thing now done in the work-room, has happily for ever disappeared. Here, then, is a point of every day practice in which, under the present regulations of the English college and in the lack of organisation in the English schools, no instruction is required of, or given to candidates for the dental diploma, and one may instance different kinds of crown work and impression taking in different materials as matters of every-day work which stand in precisely the same category. Is it not of more importance to the public that a dentist should be more thoroughly instructed in practical points like these than that he should, for example, know the course and relations of the ureters, or have been able at one time of his life to describe the dissection necessary to expose the plantar arch? Minute points of anatomy like these he will certainly be obliged to learn if passing the first and second professional examinations is made compulsory on dental students, but it is difficult to see how they will help him in his every-day practice, or of what service the fact of his having once known them will be to his patients.

But perhaps the greatest objection to this proposed alteration is the probability—some will feel inclined to say the certainty—that if carried out, it will lead to a partial neglect of the practical work at the Dental Hospital, owing to the necessity of finding time for studying the extra anatomy and physiology. It is believed already by many that at the present time less of this practical work is done by the men who are working at the same time for the L.D.S. and conjoint diploma, than by candidates for the dental diploma alone; and certain sinister rumours are afloat, that at the Dental Hospital of London the authorities are “not very hard on” the former class of students, if their record of practical work does not quite reach the amount usually required of the latter.

Is not this diminution of practical work likely to be the case with all dental students if the requirements in anatomy and physiology are so largely increased, and only six additional months given in which to study them, and is this a result which in the public interest we can any of us afford to regard with complacency?

I do hope, sir, in conclusion, that this discussion will not be allowed to die out, as it seems inclined to. I have only ventured to address you on one of the many points raised, in default of letters from those

who can speak with authority, and to whom we have a right to look for guidance in this matter. May we not expect to hear some opinions from the deans of the various dental hospitals, and others, in different parts of the country who are engaged and interested in teaching?

I am, yours faithfully,

Manchester.

GEORGE G. CAMPION.

The Halifax Case.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—Kindly allow me through the medium of our Journal to comment upon the manner in which the Halifax gentlemen have tackled one of the most aggravated cases of evasion of the Dentists Act, particulars of which, I trust, will find room in other pages of this number. To them great praise is due for the bold and independent step they have taken to suppress one of the great evils which our profession is hampered with to-day. It must be gratifying to all members of our profession who are interested in the elevation of our statute to see their efforts rewarded, for after considerable argument by both counsel they gained a verdict against defendant £5 and costs, or, in default, one month's imprisonment. This has already taken effect on several guinea-jaw professors in that neighbourhood, and we may hope that the example thus set may be followed up by others who are unfortunately placed in similar positions by bringing the strong arm of the law, aided by our Association, to eradicate this lamentable state of things. We hope for matters to speedily improve, for it is upon our exertions and the efficiency and strength of our Association that the whole dental profession depends.

Huddersfield.

C. RIPPON.

OBITUARY.

John Wreford Langmore, M.D., B.S.

WE regret to announce the death, at the early age of forty-four, of our quondam colleague and sub-editor, Dr. Langmore, and although his actual connection with the Journal and with the Odontological Society had already ceased, his premature decease will come none the less as a shock to those of us with whom he worked so long. Dr. Langmore took first-class honours in his B.S. in 1868 and obtained his M.D. in 1873. He soon developed strong literary tendencies and became intimately connected with

the literary department of our branch of the profession. For many years Dr. Langmore contributed the reports of the Odontological Society to our pages—in fact he only ceased to do so last year. On the resignation of Dr. Walker in 1883, Dr. Langmore accepted the post of sub-editor of this Journal, which he continued to fill until the end of the year 1885. Dr. Langmore's accurate scientific knowledge and literary attainments rendered his assistance of great value to the Publishing Committee during those years. Only those who have passed through an apprenticeship can know the hard work involved in editing a scientific periodical, and literary experience such as Dr. Langmore possessed was invaluable to his colleagues. Lastly, we must recall one characteristic that distinguished our late colleague in all his dealings with us, and this was a complete disinterestedness and absence of self-seeking which is perhaps rarer than literary skill.

Mr. W. H. Jewitt.

OUR Association has suffered another loss in the removal of an active and useful member; Mr. W. H. Jewitt, of Liverpool, a member of the Council of the Midland Branch, and a warm supporter of all its efforts, was prematurely called away on April 17th, after a very brief period of serious illness. Mr. Jewitt was esteemed and beloved by all who enjoyed the pleasure of his acquaintance, and his early death, at the age of only forty-three, will be sadly regretted by a large circle of professional and private friends. He was looking forward, with lively interest, to the approaching annual meeting of his Branch in Liverpool, and had already planned for himself a share in the active work of entertaining the members and friends.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

Subscriptions to the Treasurer, 40, Leicester Square.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE.—All communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

No. 6.

JUNE 15, 1889.

VOL. X.

The Annual Meeting of the Midland Branch.

WE have to congratulate our Midland Branch upon its very successful Annual Meeting, the details of which we publish in the present issue. The President, Mr. Quinby, and perhaps still more the Secretary, Mr. Waite, must have felt a justifiable pride in the large and influential gathering which met together to do honour to the Branch; but nowhere is a large Branch gathering likely to cause a livelier satisfaction than among the Executive of the Association in London. The labour entailed upon the unavoidably limited number of organisers on such occasions is appreciated at its full value by those who necessarily have a strong fellow-feeling for such workers.

The social attractions of the meeting were well looked after, and the inconstant climate was more propitious on this occasion than during the miserable Whitsuntide that has just passed by. Of the more serious work of the

meeting our readers will learn more, as the various papers and discussions are printed in the Journal; suffice it for the present to say that the latter lack neither interest nor scientific nor practical value.

Apart from these contributions to our general knowledge the sterner work of the meeting contained one salient feature which cannot be passed over without comment in these pages; we refer to the discussion upon registration under Clause 37 of the Dentists Act. The discussion was opened by Mr. Harding, of Shrewsbury, whose impartiality and singleness of purpose is, we think we may safely say, freely acknowledged by all who know him; it was carried on by many other gentlemen with temperance and fairness. The subject is, however, one of very great importance, and we think it may not be amiss to suggest in these columns considerations which were not urged at the meeting and views which, although pretty widely held among certain of our members, did not find expression there.

First of all, there is no difference of opinion about the undesirability of registration under the special clause in question. We all agree about that; in fact, the report of the hon. secretary, which was laid before the Representative Board at its last meeting, sufficiently testifies to the fact that Mr. Smale and the Executive whom he represents are fully alive to the evils which have arisen and are arising from the operation of the clause. The clause was forced into the Act by Mr. Mundella, and it was only by yielding *contre gré* upon this point that the legislation of 1878 was enabled to proceed at all. Mr. Smale has twice interviewed the President of the Medical Council upon the subject, and the result has been that the Council have expressed themselves unwilling to assume that people have been guilty of deliberate perjury without some strong evidence that the statutory declarations were false. The

Representative Board and the Business Committee have certainly never lost an opportunity of probing into the matter; the difficulty lies in the fact that these bodies have not at present been able to discover any promising means of remedy. The Medical Council act under legal advice, and while they would undoubtedly sympathise with the widespread dissatisfaction which is felt by the whole Association with the operation of Clause 37, it is eminently doubtful whether the petition of any branch, however influential, would lead them to act against the advice of their lawyers. As to the good which might come of petitioning Parliament, we agree with Mr. Waite and other speakers in thinking it would be simply *nil*. We believe that a solution will be arrived at, but until something has been suggested that promises a possibility of success we think many of our members will doubt the wisdom of proclaiming our present helplessness upon the house-tops, and it is within the range of possibility that the discussion in question may, if it gains great publicity, encourage fresh enterprises in the direction of evasion of the Act. As to allowing the clause to remain in abeyance, would not this of itself be a sort of evasion of the Act?

In conclusion, we would offer a few facts and a few suggestions for the consideration of our readers, which may assist everybody in arriving at a fair unbiassed opinion on the subject. First, the number of persons admitted under Clause 37 since January, 1880, is quoted by Mr. Waite as 234; this number, as Mr. Waite will be glad to hear, includes many persons who were not registered under Clause 37 at all, and is made up largely of those who, under other categories, come in under the designation, "In practice before July 22nd, 1878"—such, *e.g.*, as those who had made formal application but had not paid their money before the time of closure; of those from distant regions whose

formal application was on the way at that time ; and of those who, having originally withdrawn their applications under some misapprehension, subsequently renewed them and were admitted on to the Register. Secondly, the Medical Council do not entertain applications for registration under Clause 37 which are not accompanied by a certificate of birth and a copy of the articles of apprenticeship, in addition to the statutory declarations.

It must not be too hastily assumed that ten years is an excessively long period during which to exhaust the type of case contemplated by the clause. Persons were registered as in practice before the passing of the Apothecaries Act of 1815 as late as 1858, and it is still possible to be registered by the Pharmaceutical Society under a clause of the Act of 1864.

While sympathising with the laudable desire to arrest an abuse, we must not forget that, from a legislator's point of view, ten years is not a long time to exhaust the many eventualities that may attend the career of the myriads of apprentices who overflowed our workrooms before the passing of the Act, and it is only fair to express the opinion that a large number of perfectly *bond fide* cases remain still to be dealt with.

Lastly, the conditions demanded and the data exacted from each applicant for such registration have, by degrees, become more and more stringent ; the most recent condition—that of the birth certificate—having been added at the request of the hon. secretary of the Association, from whom, or through whom, it is ruled that all applications to the Medical Council should be made. And any suggestion which is thus made, and which can be usefully and legally carried out, will, we are assured, at all times meet with a ready welcome.

ASSOCIATION INTELLIGENCE.

The Annual Meeting.

NOTICE OF MOTION.—Mr. Canton desires us to announce that at the coming Annual Meeting he will move the following resolution :—

“ That the Vice-Presidents may be elected by the Associates in General Meeting, on the recommendation of the Representative Board.”

Midland Counties Branch.

THE Annual Meeting of the above was held at Liverpool on Friday and Saturday, May 17th and 18th, and in regard to the numbers present, as well as the activity displayed by the Liverpool Reception Committee, composed of all the members residing in the neighbourhood, proved to be one of the most successful and enjoyable professional gatherings the Branch has held. The following is a list of those present :—

W. H. Waite, D. Dopson, M. Alexander, W. Ladyman, E. J. M. Phillips, R. Edwards, W. F. Gaskell, W. J. Pidgeon (Bootle). T. Dilcock, R. M. Capon, J. Royston, W. Matthews, H. C. Quinby, Melville Quinby, G. A. Williams, W. Mapplebeck, E. A. Councell, F. M. Taylor (Liverpool). W. Shillinglaw, T. Mansell (Birkenhead). J. Lee Pike, J. Harrison (Sheffield). E. H. Williams, C. H. Smale, H. Planck, H. Campion, G. G. Campion, W. Broughton, F. W. Minshall (Salford). W. Headridge, W. Dykes, C. H. Morley, G. O. Whittaker, W. Dougan, W. Simms, E. Houghton, W. Kelly (Manchester). E. J. Ladmore, W. G. Jones, A. Howarth, A. M. Matthews, A. A. Matthews, W. L. Jefferson (Bradford). S. Wormald (Stockport). D. A. Wormald, G. Holt (Bury). J. C. Birch, W. A. Turner, J. H. Carter, Geo. Brunton (Leeds). A. B. Wolfenden, Arthur Cocker (Halifax). J. W. Senior, Charles Rippon (Huddersfield). James Taylor, W. E. Margetson (Dewsbury). W. Taylor (Batley). T. Jackson (Burnley). Isaac Renshaw (Rochdale). Elisha Renshaw (Mansfield). J. C. Storey (Hull). W. E. Harding (Shrewsbury). T. E. King, Walter Glaisby (York). T. Murphy (Bolton). H. Blandy (Nottingham). G. H. Lodge (Rotherham). Henry Morley (Derby). J. S. Crapper (Hanley). John Taylor (Warrington). W. Lee (Northwich). J. H. Jones (Ashton-on-Mersey). J. N.

Manton (Wakefield). Alfred Cocker (Sowerby Bridge). Thomas Buckley (Hollinwood). J. A. Fothergill (Darlington). L. Matheson (London). J. J. Andrew (Belfast). A. Kirby (Bedford). A. P. Cater (Stafford). J. S. Dickin (Southport). M. Johnson, F. Segar (Chester).

RECEPTION BY THE PRESIDENT-ELECT.

On Thursday evening, May 16, Mr. and Mrs. Quinby held an "at home" at their residence, 3, Prince's Gate West. The company numbered about 150. A temporary structure was erected in the garden, adjoining and communicating with one of the rooms, and in this a musical and dramatic entertainment was provided by professional artistes. The conservatories of Mr. Quinby, which contain, amongst other floral specimens, a splendid collection of orchids, were thrown open to visitors, the whole being illuminated with fairy lamps of varying colours.

The Council met at 9.30 on Friday morning. The general business meeting of members took place at 10.45, Mr. T. E. KING, President, in the chair.

The SECRETARY read the following report:—

Again we are called to deplore the loss of one of our members, and an active worker in the cause of dental progress. Our friend, Mr. W. H. Jewitt, of Liverpool, passed away on April 17th. He had assisted in the earlier stages of preparation for this meeting, and was anticipating it with eager delight. Genial, generous, and energetic, we mourn his loss with no ordinary regret. It casts a deep shadow over our meeting. A resolution of sympathy with the widow and family will be submitted at the close of the business.

In reviewing the past year, your Council look back with peculiar satisfaction to the Annual Meeting at York. The energy and zeal of our retiring President, coupled with the generous and hospitable entertainment provided by Mr. Glaisby, were instrumental in securing a capital attendance. The papers, demonstrations, and discussions were good, and the whole results must have proved both gratifying and profitable to all concerned.

In the month of November your Council held an informal meeting in the north-east corner of the district, at Darlington; the aim of which meeting was to afford an opportunity to members in that locality to come together and consider the advisability of establishing a Northern Counties Branch. Nearly all the members of the British Dental Association in the district were

present, and there was a general feeling of assent to the proposal, which was positively endorsed by a definite resolution. Your Council are sorry, however, to have to report that, so far, the brethren have not been able to carry out the resolution referred to, simply because there are not a sufficient number of members of the British Dental Association in those counties to constitute a separate branch. This is much to be regretted.

In February last another informal meeting was held at Bolton, where the attendance was very encouraging, and the various matters introduced for discussion were not only plentiful, but deeply interesting and practical.

It is with regret that your Council have to record a very small addition to the list of members this year. Several new names have been added, but unfortunately, at Christmas last, nearly a dozen had to be removed, chiefly owing to non-payment of arrears of subscriptions to the British Dental Association. The Council would again remind their friends that where the double subscription is felt to be a burden, there is still an opportunity of maintaining a relation to the local Association by becoming "Associates" of the Branch; and they would urge any who are indisposed to continue the double membership, not to wholly sever connection with their brethren, but to avail themselves of the privileges afforded to "Associates."

The attention of your Council is still directed to the condition of the Dentists' Register, and they cannot refrain from an urgent appeal to the members to jealously watch and keep themselves fully acquainted with this most important subject. In particular, your careful consideration is drawn to Clause 37* of the Dentists Act, and to the fact that under this Clause registrations are still being effected. Since January 1st, 1888, no less than 25 such cases have occurred (which may be seen in the Register for the present year). This is a question in which every individual is equally interested, but especially those who have passed through the curriculum, and it behoves each one to study the matter for himself.

* CLAUSE 37.—"Any person who has been articled as a pupil and has paid a premium to a dental practitioner entitled to be registered under this Act in consideration of receiving from such practitioner a complete dental education, shall, if his articles expire before the first day

of January,* 1880, be entitled to be registered under this Act as though he had been in *bonâ fide* practice before the passing of this Act. Moreover it shall be lawful for the General Council by special order to dispense with such of the certificates, examinations, or other conditions for registration in the Dentists' Register required under the provisions of this Act, or under any bye-laws, orders, or regulations made by its authority, as to them may seem fit, in favour of any dental students, or apprentices who have commenced their professional education or apprenticeship before the passing of the Act."

Personal indifference to the condition of the Register is neither more nor less than neglect of public and personal interest, and the sure and swift result must be the forfeiture of whatever benefit was supposed to have been derived from the passing of the Dentists Act.

The actual number of members of the Branch, at this time, is 138.

The Council nominate as their representative on the Representative Board for next election, your retiring President, Mr. T. E. King.

Also, they have thought it desirable that the next Annual Meeting be held in Derby, and they nominate Mr. G. Brunton, of Leeds, as the President-elect.

MR. S. WORMALD, the Treasurer, next made his financial statement. The balance last year, he said, was £22 11s. 2d., and the subscriptions for the year amounted to £27 5s., making a total of £49 16s. 2d.; and the expenditure for the year had been £19 14s. 5d., leaving a balance of £30 1s. 9d.

The PRESIDENT said the two reports spoke for themselves, and he had great pleasure in moving the adoption of both.

DR. WAITE said he rose to second the motion with the view, not of making any remarks upon the reports, but of taking the opportunity of saying a word with regard to the sad event which they all very deeply mourned—the loss of their friend, Mr. W. H. Jewitt. It would be inappropriate, at a meeting like that, to

* Total additions to the Register since this date :—

Licentiates	191
Under Clause 37	234

enter into anything like private or personal details. He felt Mr. Jewitt's loss very deeply himself, for he knew him well, and the more he knew him, the more he learned to respect him. He was a man upon whom one could thoroughly depend for helping forward the work in which they were all engaged. The interest he took in the arrangements for that meeting amounted to enthusiasm. His sudden removal, under circumstances peculiarly distressing and painful, had been a heavy blow to them all. He moved :—

"That the Members of the Midland Branch of the British Dental Association, assembled in Annual Meeting, hereby record their painful sense of the loss they have sustained by the untimely death of their friend and colleague, W. H. Jewitt, of this city. Further, they wish to bear testimony to his earnestness and activity in respect of the advancement of the dental profession, to his willingness to help in any and every movement, and also to his genial and amiable disposition, which won for him the esteem and affection of all who knew him. Lastly, they desire unanimously to express their deep and tender sympathy with the bereaved widow and young children in this time of acute and irreparable sorrow."

He hoped this resolution would be carried in silence, and a copy forwarded to the widow and children.

The resolution, which did not need a seconder, was put by the President to the meeting, and carried unanimously.

Mr. BLANDY moved, and Mr. BRUNTON seconded, the omission of a paragraph in the Report, which was carried, and the Report, so amended, with the Treasurer's statement, were unanimously adopted.

THE REGISTER.—THE APPRENTICESHIP CLAUSE.

Mr. HARDING said he should like to bring before the meeting a resolution referring specially to that paragraph of the Report which spoke of the admission of men to the Dentists' Register under Clause 37. The framers of the Dentists Act included this clause, he believed, to prevent any possible injustice to those men who were then serving an apprenticeship, and had thought that by apprenticing themselves, or being apprenticed to a recognised practitioner, they would thereby, at the expiration of their apprenticeship, be entitled to practise as dentists, as heretofore, without passing any examination. But he imagined this was not done with the idea that the clause should be continued in operation for ten years afterwards. They would see it stated in the Report that last year 25 men were admitted under this clause,

which might be considered the back door. Before moving the resolution he should like, for his own information, and also for the information of the members present, to ask Dr. Waite if he would give them a few particulars about the admission of those members. He believed that the Medical Council simply required a statutory declaration, sworn before a commissioner, by these persons, saying that they were at that time serving their apprenticeship, and that it expired before January, 1880, and also another statutory declaration before a commissioner by the men to whom they were apprenticed. They, as men of the world, knew that a statutory declaration, if they were not particular who gave it, might be obtained on very easy terms, especially when the probability of a prosecution for perjury was exceedingly remote. In making affidavits taken in legal cases—such, for instance, as an executor making a statement with regard to the liability for legacy duties—a person did it with a very elastic conscience; and, in a case like this he left them to judge how easily that declaration might be obtained; and he thought that the Medical Council, in exercising what they maintained to be their rights—he did not impute to them any sordid motives—ought at least to require something further from the applicants to be admitted under this clause than a statutory declaration. He would suggest, amongst other things, that they should require a register of the applicant's birth. To put it in the mildest form, it was very strongly suspected that many men who had registered under this statutory declaration were not 15 years of age in 1880, probably some of them perhaps younger; but it was apparent that to prosecute these men for perjury was an almost impossible proceeding. Immediately they began to search into their antecedents every avenue of information was closed. A man who had come from the lower strata cropped up, and presented a statutory declaration, sworn to by himself and somebody else, and that was all they knew about him. Therefore, he maintained that some further guarantee ought to be required that those were genuine cases—that they were not cooked cases simply to get on the Register by the back door. The resolution he proposed for consideration was—“That, in the opinion of this meeting, the time has fully come when Clause 37 of the Dentists Act should be placed in abeyance.” He should like to ask Dr. Waite first what proportion the men admitted under Clause 37 bore to those admitted after passing examinations by any of the licensing bodies. Last year

there were 25 admitted under that clause. What relation did they bear to the others? By this means they would be able to see how long it would be before the licentiates got more swamped than they were now. They swallowed a bitter pill at first in admitting any one who would make a declaration, and they knew the class who were admitted. They were admitted wholesale. By merely making a statutory declaration hundreds of men were admitted on the Dental Register who had no right whatever to be there. Then he should like to ask Dr. Waite what means they had of stopping this? Would pressure brought to bear on the Medical Council have any effect? Had the Medical Council any power if the Association brought pressure to bear upon them? Of course the pressure he alluded to was a concensus of feeling amongst the profession generally. If they could get a unanimous expression of feeling on the part of the profession, it might have some effect, but he would like to know from Dr. Waite what line that pressure should take. There were other points he should like to elicit; but the question of *bonâ fide* apprenticeship, and the question of age were the two most important ones—the question as to whether a man was really a *bonâ fide* apprentice, and the question of his age, as showing whether it was possible.

Dr. WAITE said he should confine himself to the questions which Mr. Harding had asked, and he should prefer to give what knowledge he possessed in answer to questions. Mr. Harding had asked what proportion qualified members admitted to the Register bore to those admitted under Clause 37. He had not with him a tabular statement of them from year to year, though such a statement had been made; but the net results since January, 1880, were printed at the bottom of the Report. The number of licentiates admitted since January, 1880, was 191; the number admitted under Clause 37 was 234. That would give them an idea of the relationship. Mr. Harding had very accurately stated the terms upon which these men were admitted under Clause 37. The Medical Council required nothing else than a statutory declaration by the applicant, and another by the person who had taught the man, and a fee of £5. Those were the only requirements. The Medical Council were in this position—they said they were instructed by counsel that they had no option in the matter, but were bound to register all such cases. That was the point at issue. If they read Clause 37 carefully, they would see that it placed almost unlimited discretion in the hands of the Medical Council.

But this was his point—that they had no right to take Clause 37 out of the Act, and interpret it *per se*. He believed it to be good law that every clause of every Act was only to be interpreted in its relation to every other clause in that Act. They must place Clause 37 alongside the other clauses of the Act to ascertain its proper meaning, and then they would see at once that Clause 37 was simply inserted to avoid doing a possible injustice to the youths who were apprenticed before the Act was passed. Therefore, he contended that that clause should not be continued indefinitely. If it were possible that now, after ten years, there were any cases of men who were apprenticed before 1878, who had not yet been on the Register, the first question which arose was “Where have you been all this time? What have you been doing if your apprenticeship terminated before 1880, and you are not yet on the Register?” On the very face of it these questions suggested doubts, and the necessity for a very searching investigation. That was precisely the end to which all their efforts must be directed—that the Medical Council should not be content any longer with this mere statutory declaration, which might be obtained, as they all knew, on very easy terms, but should make a thoroughly searching investigation into every case, and use every means in their power to establish the truth of the case before the name was inserted on the Register. Mr. Harding referred, just incidentally, to the action of the Representative Board. This matter had been before the Representative Board and before the Executive again and again, to his knowledge, ever since the commencement of 1884, and they were challenged to prove a case. Now a case had been proved. In 1886 one of their members employed his spare time for weeks in tracing out the history of one of these cases, and it was proved that during the whole of the time the individual was sworn to have been serving his apprenticeship he was a boy attending school. That man’s name was erased from the Register; but it had made no difference—Clause 37 is still in operation.

Mr. E. H. WILLIAMS (Manchester) seconded the motion.

Mr. PLANCK drew attention to the fact that this was a clause in an Act of Parliament, and he doubted whether the Medical Council could place it in abeyance.

Mr. HARRISON said there were very considerable difficulties about this declaration. If a declaration were made and inquiry instituted, the particulars could not be obtained.

Dr. WAITE said no one had suggested that they should put an Act of Parliament in abeyance. It was only one clause in an Act, and one which on its face bore a temporary meaning. It was simply to meet an emergency, to avoid an injustice, that that clause was put in. Any one who brought common sense to bear would see that Clause 37 was not intended to be permanent. If it were, the value of the curriculum was greatly lessened. It was only intended to be a temporary provision, and he thought that the request that it should be "placed in abeyance" was perfectly reasonable.

Mr. COCKER (Halifax) asked if they might take it for granted that Dr. Waite believed, or that it was his opinion, that the Medical Council had a perfectly legitimate right to interpret Clause 37.

Dr. WAITE : To interpret it how ?

Mr. COCKER : To interpret the meaning of the clause as to whether any one should be admitted to the Register on the statutory evidence.

Dr. WAITE replied that the clause was as vague as it could be made, and placed almost unlimited power in the hands of the Medical Council. If they took that clause by itself, away from the other clauses, they had perfect power and could do what they liked. But his contention was that Clause 37 was only part of an Act, and had to be viewed along with the other clauses of the Act; and that, when so viewed, it was merely a clause to avoid doing injustice.

A MEMBER : It has virtually come to an end.

Mr. STOREY : Not only are the Medical Council the interpreters, but they are the administrators of the clause.

Mr. W. A. TURNER (Leeds) inquired whether the asking that this clause should be dropped was an insinuation that the Medical Council were incompetent to deal with the matter. It was admitted that they put their own interpretation upon the clause, and construed it as they thought it was intended that it should be construed, and to ask them to drop it altogether was to say that they were not competent to put the right construction upon it. It might so happen that some members of the profession might have been away when this Act was passed, and, if they returned home, they might not be able to get on the Register if this clause were dropped. If he understood aright, that the Council had the power to construe the clause, they could, by making the requirements

more stringent, get over the difficulty ; otherwise, perhaps it might be necessary to appeal to Parliament for the repeal of the clause.

Mr. SHILLINGLAW (Birkenhead) said that, as he read the clause, the first portion of it, down to the word "moreover," gave the Council no option ; they must admit to the Register any person who produced the evidence there required. The latter portion gave them an enormous amount of discretion. It gave them a licence actually above law. It allowed them to do just what they liked. It allowed them to admit any persons on the Register, whether they produced certificates or not, whether they passed any examination or not, the only thing necessary being that there should be a special order of the General Council. The question was what was a special order of the General Council. He took it that it must be something different from the ordinary routine business of the Council. By special order, they could dispense with such certificates, examinations, or other conditions as they thought fit, and the Association had no say in the matter. A person had only really to present himself before the members of the Council, and be backed up by a friend to meet the Council, and he could get his name placed on the Register.

Mr. FOTHERGILL asked Dr. Waite if, in any of the numerous cases he had mentioned, he thought that a successful prosecution for perjury could be carried through.

Dr. WAITE said there was no doubt that in the case erased in 1886, there might have been a prosecution for perjury without any difficulty at all. Of course the same evidence that would be convincing of the fraud would be convincing of the perjury, because the documents were in the hands of the Medical Council, and the signatures thereto attached.

Mr. FOTHERGILL : I want to know if there is any case amongst those 25 in which Dr. Waite thinks there could be a successful prosecution for perjury.

Dr. WAITE : That is precisely the point. The difficulty is in following a case up to the hilt. It is extremely difficult, and, if any one doubts it, I recommend him to try. Mr. Harrison has tried it, and you hear what he says. I have tried it in two or three cases, and have found the utmost difficulty in getting information which would be good in a Court of Law.

Mr. HARRISON said that when these statutory declarations had been made, it was necessary, in order to enable them to take

action, that they should know in each case what declaration had been made. He thought perhaps the most sensible way of dealing with the matter would be to appeal to Parliament to repeal the clause. It would do away with all sorts of enquiries, and all sorts of difficulties.

The PRESIDENT: Do you propose an amendment to Mr. Harding's motion?

Mr. HARRISON: With your permission, Mr. Chairman, I will propose "that Parliament be petitioned to repeal the 37th Clause of the Dentists Act."

Mr. W. A. TURNER (Leeds) seconded the amendment.

Mr. H. PLANCK (Manchester) said he had great pleasure in supporting it. There was no doubt that very grievous frauds were committed. He was sorry to appear to be in opposition to Dr. Waite, whose knowledge on the subject was so large, but he thought that if they were to take upon themselves to suggest that a clause in an Act of Parliament should be placed in abeyance, they would put themselves in an absurd position. Dr. Waite talked about the spirit of the Act, but lawyers did not weigh Acts of Parliament by the spirit, but they weighed every word, and the words were, "shall be entitled to be registered." It was a most important clause, and they had no power to recommend the Medical Council to hold it in abeyance. He strongly supported the amendment that they appeal to Parliament to repeal it.

Mr. W. J. PIDGEON (Liverpool) said it appeared to him that in discussing this matter they should consider what would be the effect of their recommendation if they sent it up to the Medical Council. Of course they could recommend what they liked, but the question was, would it have any effect? Would it appear to the Medical Council anything like coercion? If it did, it perhaps did not matter much, so long as they got their way; but would they get it? To get the clause repealed, if this were practicable, would be the best way out of the difficulty, and he thought they should take that course. It appeared that the Council had set their minds on a certain course, and, if they had not altered it so far, was it not questionable whether they would alter it, even if the Association became more unanimous in their appeal to them? He should like to know if any gentleman could give them any information as to whether there would be any great difficulty in appealing to Parliament to bring about what they desired. It was hardly likely that the resolution would have been brought forward

and that side of the case not considered at all ; and he presumed that the gentleman who brought it forward had considered that that course would be too difficult, and that the course he proposed was the only practical one. He should like to hear that explained.

Dr. WAITE thought that an appeal to Parliament was about as utopian as any scheme. Even if they made the appeal, he did not think there was the slightest possibility of their getting anything through Parliament in relation to the Dentists Act. The matter had been talked over and discussed again and again, and the difficulty stared them in the face as broadly as ever. His own opinion was the resolution would be of great service in strengthening the hands of the Council of the Association in London in their representations to the Medical Council. It would be a great support to them if they felt that they had a large branch, like the Midland Branch, urging that this clause should be placed in abeyance. That did not mean that it should be obliterated, but that it should be dealt with under a reasonable interpretation with the other clauses of the Act. He suggested to the Representative Board that they should send in a representation to the Medical Council, asking them, when a case came before them under Clause 37, not to admit the declaration without further question, but to send it over to the executive of the Association, who, through the branches and means they had of making enquiry throughout the country, should thoroughly investigate the case before it was admitted.

Mr. T. MURPHY (Bolton) asked whether it would not be within the province of the Midland Branch, and very likely of the other branches, to appeal to the Medical Council direct. If the Representative Board did not support them in the matter, he thought they ought to take the bull by the horns, and act for themselves ; and he thought the Medical Council would listen, seeing that so long a time had elapsed since the passing of the Act.

Mr. G. BRUNTON (Leeds) said there was one difficulty he saw in front of them if they were to adopt the course proposed by Mr. Harrison, and that was that they would have to stump the country and educate the electors on the point.

Mr. HARRISON : You would merely have to educate members of Parliament, and you could surely make representations to your own members.

Mr. HARDING thought the chances of obtaining an Act of Par-

liament were absolutely *nil*. The British Medical Association, with their power of organisation, consisting of many thousands of members, were many years applying, year after year, to Parliament and making no progress whatever, the Bill being shunted year after year, and he asked what chance the British Dental Association, even if they were unanimous, would have of getting a small Act like this through Parliament, especially an Act of a type which Parliament was very reluctant to pass? Parliament had always shown itself very reluctant to pass any Act which involved anything like restriction. They had very great difficulty in getting the Dentists Act, with the restrictions it contained. The spirit of Parliament was opposed to it. They were opposed to close corporations of every description, and it was with the greatest difficulty that Act was got through. He might say that his principal object in bringing forward the resolution was, not that it should be sent up to the Medical Council, but more as a means of educating the members of the Association—what he might call the constituents, not of members of Parliament, but of the representatives of the Association in London—as to what was the feeling throughout the country. He had heard a story that when some Act was wanted to be passed by—he thought it was the Society of Friends, some years ago the members of the Society in the constituencies wrote individually to their representatives in Parliament, and they put such pressure upon them, that they obliged them to go into the matter; and if they would educate every member of the Association they came in contact with on this point, and so produce a consensus of opinion that there ought to be more stringency in regard to the admission to the Register, of persons of the class referred to, he thought they would do some service. It was more with the object of eliciting discussion and educating the opinion of the branch that he brought the matter forward.

THE PRESIDENT: The question has been well discussed, and therefore I will put the amendment.

The amendment was lost by a large majority.

The resolution was then put and carried unanimously, with applause.

ELECTION OF OFFICERS.

Messrs. T. Murphy (Bolton), and J. L. F. Pike (Sheffield), retiring members of the Council, were re-elected, and Messrs. G. G. Campion (Manchester), and J. A. Fothergill (Darlington),

were elected in the place of the late Mr. Jewitt and of a retiring member (Mr. D. A. Wormald), who did not offer himself for re-election.

Mr. BLANDY (Nottingham), said he had great pleasure in proposing their old friend, Dr. Waite, as honorary secretary for the succeeding year. He was sure that those of them who had had the honour of serving in this Association with the experienced and valuable aid of Dr. Waite, would esteem it a very great credit to the Society to have him continue in the position of Secretary. They relied upon Dr. Waite as a man of very great experience, and as one who had the interest of the Association and of the Midland Branch most at heart. They had the greatest confidence in him, and, so long as his health and strength permitted him to take the position, he thought they should unanimously vote that Dr. Waite continue their secretary.

Mr. WILLIAMS (Manchester), seconded the motion, which was carried by acclamation.

On the motion of Mr. J. Renshaw, seconded by Mr. Williams, Mr. Sydney Wormald was also unanimously re-elected as treasurer.

THE HALIFAX PROSECUTION.

Mr. RENSHAW, who kindly acted as assistant secretary during the proceedings, read the following statement, furnished by the Halifax members, with reference to the recent prosecution under the Dentists Act at Halifax :—

It will be within the recollection of many present, that at an informal meeting held at Leeds in February of last year, a resolution was passed that a case of infringement of the Dentists Act at Halifax be laid before the Representative Board. This was done, and the matter was referred to the business committee, with permission to take the legal opinion upon the matter if necessary. A form was sent to the Halifax brethren, and was filled up with the required information, but no action was taken upon it. Within the last twelve months two other unregistered men have opened dental establishments there, and our friends thought it time some action was taken. Consequently ten of the dentists in that town signed a petition agreeing to bear a proportion of the expenses incurred in a prosecution. Mr. W. Willis, of Halifax, whose name was being freely used by his late pupil, prosecuted, and was supported in the witness-box by Mr. A. B. Wolfenden.

and Mr. Arthur Cocker. The trial took place on the 25th of last month. Counsel was engaged on both sides, and resulted in a victory for the dentists, the defendant being fined five pounds and court costs.

The two other law-breakers mentioned were both using the words "Surgeon Dentist" in conjunction with a registered dentist's name, but since the trial have been compelled to take in their signboards, lamps, &c., and each have paid one guinea to stay further proceedings being taken against them for their offence.

Another unregistered man in Todmorden has been obliged to doff off his "Surgeon Dentist" and has undertaken to strike everything out of his advertisement but his bare name and address, and this he has done through the advice of a solicitor, while another firm of these pretenders have been made to collapse altogether.

The Halifax dentists are advised that putting out glass cases and calling themselves "Artificial Teeth Manufacturers," &c., &c., are all infringements of the Dentists Act, as these are all a description of what is done within; and if these men continue to do this, and put out their inviting specimens, it is believed our friends will again test the law on this point.

THE DENTAL BENEVOLENT FUND.

A letter from Mr. Woodhouse, Treasurer of the Benevolent Fund, was read, suggesting that a box should be provided for small contributions, as recommended by Mr Pearsall, the Irish Secretary.

The SECRETARY said that, in consequence of this letter, a box had been provided and presented to the Branch by Mr. Dopson, of Liverpool, with the words "Dental Benevolent Fund" painted on it, and the box would in future be placed on the table at their meetings for the purpose explained by Mr. Woodhouse..

VOTES OF THANKS.

The SECRETARY said there were three or four resolutions which, with the permission of the meeting, he would move all together. They were :—

1. "That the Members of the Midland Branch of the British Dental Association desire to convey their very cordial thanks to the President and Council of the Liverpool Medical Institute, for the privileges accorded in the use of their premises during the proceedings of the Annual Meeting of 1889."

2. "That the Members of the Midland Branch of the British Dental Association desire to convey their very cordial thanks to the Committee of the Liverpool Dental Hospital, for the privileges afforded in the use of the premises during the proceedings of the Annual Meeting of 1889."

3. "That the Members of the Midland Branch desire to express their hearty appreciation of the liberality, and variety of the entertainment provided for them by the Members of the Branch resident in Liverpool, by means of which the Anniversary of 1889 will be a notable fact in the history of the Branch."

4. "That this meeting desires to convey its best thanks to Messrs. Willis, Wolfenden, and Cocker, of Halifax, for the earnest and persistent manner in which they have endeavoured to vindicate the provisions of the Dentists Act; and especially in that they have courageously attacked a case of admitted difficulty and uncertainty."

Mr. BRUNTON seconded the resolutions, which were carried unanimously.

Mr. T. E. KING, the retiring President, on leaving the chair, said :—

GENTLEMEN,—It has been said, and I think truly, that "it is degradation to a man to be reduced to the life of the present, and never will he cast forth his hopes and views and his efforts towards the future, unless, at the same time, he holds fondly clasped to his heart the recollections of the past." This was in my mind when I had the honour of addressing you last year, and they were the feelings which prompted me to glance back over a short period of the history of the growth and progress of our Association before alluding to subjects more immediately concerning our present position.

The points upon which I afterwards tried to focus your attention, were the importance of the individuality of the dental qualification, and the vital importance of maintaining the influence of the branches in the management of the Association. With regard to the first of these points we have seen considerable activity displayed during the past year.

The subject of dental qualifications has been discussed in the Journals, and the question of the formation of a dental section in connection with the British Medical Association has been brought forward by correspondents in the pages of the Journal of that Association.

The question of higher dental degrees has also occupied considerable attention during the year.

Large attendance of the representatives of the branches at the

Board Meetings have shown an increased desire to understand and take an interest in the business of the Association.

At the Annual Meeting held last year, in Dublin, an addition was made to the bye-laws, enabling Vice-presidents to be appointed. Unfortunately no rule has been laid down for nominating them, so unless the Branches are prepared to do so, the responsibility will fall upon the Business Committee. I hope our Branch will set a good example and be prepared to bring forward one or two representative men, and that at the next Annual Meeting you will all attend to vote for them. Although, apparently, a trivial matter, it is really important, as a list of Vice-presidents from all important districts shows at once that the Association is national and not confined to any particular portion of the country. Other additions to the bye-laws, affecting the interests of the Branches, have been before the Representative Board, and will be submitted for approval at the next Annual Meeting to be held at Brighton in August next. The Board itself has adopted a more approved method of appointing one of its committees, which I trust may lead to its powers being better defined, and its proper position in relation to the Board being better understood, so as to avoid all unnecessary friction in the future.

To ourselves as members of the Midland Branch the year has been propitious, and I feel grateful for the great kindness and consideration which has been shown to me. It is a great consolation for me to know that I am to be succeeded by experienced hands, so that anything which our Branch may have suffered from my errors or shortcomings may soon be rectified.

To our Hon. Secretary I am very much indebted, and so long as we are able to retain his services no one need fear undertaking the office of President; everything is done with method, and every detail so carefully worked out, that all goes smoothly and without any friction.

The sad death of one of our members casts a gloom over the end of what has otherwise been a pleasant year. I think nothing more remains for me to do, but make way for my successor, who I sincerely hope will have as pleasant and agreeable a term of office as mine as been.

Dr. WAITE said there was one privilege he always reserved to himself, and that was the privilege of proposing a vote of thanks to the retiring President. He had now lived to see ten Presidents

take office, and each one had his own character for excellence. He did not wish to draw comparisons, but he must say that the characteristic which had distinguished Mr. King's presidency had been hard work. He had been instrumental in introducing more members to the Branch Association than, he believed, any other individual, and he had diligently attended every meeting, not only of the branch, but of the Representative Board in London, and of other branches in other parts of the country; and this was a characteristic of great value. They wanted men who would be faithful to the duties they undertook, and do their utmost to discharge them; and he had great pleasure in proposing that the thanks of the members be accorded to Mr. King on his retirement from the presidential chair.

Mr. RENSHAW seconded the motion, which was carried by acclamation.

Mr. KING having thanked the members for their kind approval of his efforts, remarked that though he was no longer their President he hoped to have many opportunities of meeting them again, then retired from the chair amidst loud applause, and it was taken by Mr. H. C. Quinby, the President-elect, who was accorded a most hearty and enthusiastic reception.

The PRESIDENT (Mr. H. C. Quinby) then delivered his inaugural address, which will be found at page 354.

Mr. MATTHEWS (Liverpool) in moving a vote of thanks to the President for his able address, remarked that it was a great privilege to the younger members to belong to an Association like that, where they had the opportunity of hearing from men of standing the results of years of experience.

Mr. CAMPION (Manchester), who seconded the motion, said he knew from experience that the position of President was not a sinecure, and he thought that they owed to the gentlemen who filled it a deep debt of thanks for the valuable information they so frequently conveyed to the members of the Association in their inaugural addresses.

The vote having been carried by acclamation and acknowledged, an adjournment took place for luncheon at the Adelphi Hotel, to which the members were invited by the President.

DEMONSTRATIONS HELD AT THE LIVERPOOL DENTAL HOSPITAL

J. CHARTERS BIRCH, Esq.—Cuttris's improved electric motor fitted with new automatic clutch, enabling operator to instantly

stop or start the tool held in the handpiece without altering speed of motor ; also for working above, Cuttris's patent storage battery, weighing only 8 lbs, containing stored electricity for working motor at maximum speed for 14 consecutive hours, attached to which was shown electric lamp and holder to fit on finger ring on operator's left hand for throwing light into patient's mouth during operations, the whole apparatus being arranged to fasten alongside operating chair.

A. KIRBY, Esq.—His small motor mounted on stand with foot break, and novel elbow joint ; a full description of this beautiful instrument will be found in our Journal for May, page 296.

G. BRUNTON, Esq., exhibited an eight-candle power lamp for use outside the mouth. The reflector consists of a short cylinder of plaster of Paris, at one end of which is placed a platina reflector of concave form ; in front of platina reflector is hung the electric lamp. The advantage of this arrangement is the complete obliteration of the filament image. This lamp was mounted with a ball and socket attachment to a novel bracket having a large range of motion. An electric lamp for surgical purposes invented by Dr. Stein, and made by R. Blänsdorf of Frankfort-on-Maine was shown by Mr. Brunton, and consisted of a small electric lamp mounted on a sort of spectacle frame of ebonite between the two eyes, which are protected from the light by tubes of paper ; the advantages of this construction are, the light is parallel with the visual rays, it is fixed on the head, leaving the hands quite free, weighing only 50 grammes, and can be worked by a small portable battery carried in the pocket. Also a non-thermal lamp made by Messrs. Reynolds & Branson, Leeds, consisting of the well known glass rod, introduced by Mr. Thos. Christy, F.L.S., for the communication of light for microscopic purposes, only that instead of a paraffin lamp there is an electric lamp attached to the rod, thus enabling the operator to hold the rod in any position. This lamp is the best yet produced for examining the mouth.

A small electric lamp for examination having a finger-contact conveniently placed, so that the light need not be used until the lamp is brought into position. This lamp was sent by Messrs. MAYER & Co., Leeds, and is worked by one of their patent primary batteries.

One of the S. S. WHITE and Co.'s electric mouth lamps was also shown.

Great interest was taken by the Members in the electrical display,

which was one of the best ever brought together in this country for dental purposes.

W. E. HARDING, Esq., operated with a "Detroit Electric Motor," worked by Accumulators supplied from the Dental Manufacturing Company.

T. MANSELL, Esq., performed a difficult and beautiful piece of bridge-work, displaying therein much patience and skill. The operation lasted three hours.

W. SIMMS and E. HOUGHTON, Esqs., exhibited their improved apparatus for "Continuous Gum Work," which was fully described in the paper read by Mr. SIMMS at the afternoon meeting.

Mr. W. Simms (Manchester), then read his paper on "Continuous Gum Work," which will appear later on.

THE DINNER.

At half-past six o'clock the members dined together at the Adelphi Hotel, under the chairmanship of Mr. H. C. Quinby, the President. In addition to about eighty members, the company included a large number of guests, including Revs. T. W. Lund and W. Cuffe, Dr. Carter, Dr. Glynn, Dr. Bailey, Dr. Briggs, Dr. Barron, R. Harrison, Esq., F.R.C.S., Rushton Parker, Esq., F.R.C.S., R. Williams, Esq., M.R.C.S., — Larkins, Esq., M.R.C.S., R. Pugh, Esq., M.B., A. Harris, Esq., M.B., F. T. Paul, F.R.C.S., L. Morgan, M.D., T. Brakell, Esq., Treasurer Dental Hospital, W. F. Jackson, Secretary Dental Hospital, C. H. Shears, M.R.C.S., Dr. Grimsdale, jun., and several others. The usual loyal and patriotic toasts having been duly proposed, seconded, and honoured,

The PRESIDENT said the next toast upon the list, "The British Dental Association and Branches," was to have been proposed by Dr. Nevins, but he regretted extremely to be obliged to say that that gentleman was so unwell that he was unable to be present. Dr. Carter, President of the Medical Institute, had kindly volunteered to take his place.

Dr. CARTER, after expressing his regret at the enforced absence of his friend, Dr. Nevins, said that the only thing that reconciled him to the absence of Dr. Nevins was that it afforded him an opportunity, as President of the Medical Institute, of conveying to the members of the Midland Branch of the British Dental Association the welcome which he was sure the whole medical

profession of the city wished to express to a body who were their guests, in some measure, for the second time, and who were engaged upon a somewhat similar work to their own—that of endeavouring to alleviate the great sum of misery that human beings were subject to. It was not very many generations ago since medicine and surgery were linked with dentistry, with chemistry, with obstetrics, and with many other branches. They were all familiar with the Doctors Crabb, Potion, and Slop, whom Smollett and Sterne represented, and who were, no doubt, faithful representations of the men of those times, who were the only practitioners of all those multifarious arts; and they knew that Voltaire spoke of medical men as men who “put physic, of which they knew little, into stomachs, of which they knew less.” The emergence of medicine from something like a mere empiric art to something which, though not, from the nature of it, an exact science, came very near to it, did very much, not only for the medical profession, but for the public into whose stomach they had to put physic; and the same advantage must accrue to the public from the accession of dentistry to the position of a legalised profession. He was told that for this gradual advance of dentistry to the distinct and recognised profession it now was one gentleman was distinguished. That gentleman was Dr. Waite. That gentleman, he was told, had been earnest in his endeavours to consolidate and increase the influence of this large association. To him especially it was due that no narrow privilege in the right to grant diplomas was granted to one portion of the United Kingdom alone, but that it extended to Edinburgh and Dublin as well as to London.

If that were Mr. Waite's only service, it would be a service that would entitle him to their great commendation and praise; but he was told also that he was the heart and soul of the Midland Branch, and that there were few others who had done so much, and who were willing to do and suffer and sacrifice so much, as he. He was told that the Treasurer, Mr. Wormald, was also distinguished for his continued efforts in the same good cause. He thought that, with all the advance that the dental profession had made of late years, there was a little yet that it might do. They must endeavour to get from the Medical Council, or some other governing body, a means of cutting off unworthy people, who endeavoured to perform the duties of medical men without the necessary qualifications to perform them. He hoped that the

Dental Association would not stop until some means had been devised for putting an end to fraud and imposition on the public. He wished success to the British Dental Association and its branches, and he coupled with the toast the name of Mr. W. H. Waite.

The toast was drunk with musical honours, and "one for his wife."

Dr. WAITE, who was greeted with loud applause, said that what had been said of him had almost taken away his power of speech. It was not without considerable diffidence, mixed with regret, that he found himself in the position he did. They had hoped to have been favoured with the presence of one or two, at least, of the chief officers of the Association, but their esteemed friend, Mr. Smith Turner, Chairman of the Representative Board, was detained, he regretted to say, by serious indisposition, and Mr. Smale, the General Secretary, had written, regretting that he would not be able to be with them either. This was his apology for presuming to stand up in the name of "The British Dental Association and Branches." On behalf of the members generally, he tendered to Dr. Carter their very hearty thanks for the extremely kind manner in which he had filled up the vacancy caused by the illness of Dr. Nevins, and also for the very intelligent and pertinent remarks he had made in proposing this toast. It was not often that they met—and, therefore, it was the more gratifying when they did meet—with such thorough appreciation of their position at the hands of a leading medical practitioner. Perhaps it might be interesting to some of their guests if he were to state that the British Dental Association was exactly ten years old. Its corner stone was laid at a meeting held in Willis's Rooms in March, 1879. Their objects were, taken broadly, the education and distinguishing of the dental profession in science, in practice, in ethics, in politics and in charity; and by the pursuit of these objects they believed that they were, in the truest sense, promoting the general interest of the public. Their first decade had been occupied mainly in breaking ground by the establishment of branches in eight separate districts of Great Britain and Ireland. This work had progressed with marvellous rapidity, and, although the number of their members was yet very small when compared with the aggregate number of dental practitioners, yet still, considering the pit from which they were digged, he thought they had abundant reason for thankfulness and encouragement. The

next decade must inevitably develop a spirit of activity and independence among the various branches. The whole future of the Association hung upon the growth and fruitfulness of its branches, and it was, therefore, gratifying to find symptoms of awakening and of effort, not only at their Branch meetings, but among the residents in individual towns and cities. There was eternal wisdom in the old proverb, "God helps those who help themselves." Hitherto the time and thought, and wear and tear of organising and working the Association, and of managing its Journal had been all but entirely voluntary, and it would be almost impossible to over-estimate the value of these self-sacrificing services rendered by the leading men in the dental profession all over the country, many of them men whose position was already well assured, and who, for many reasons, might claim exemption from such toil. He thought that was a fitting occasion to acknowledge the value of the services rendered by these labourers, especially when they remembered that the demands made upon them were neither few nor small. The advantages derived from the formation of an Association like this, in reference to its objects, scientific discussions, clinical demonstrations, practical illustrations of all subjects relating to their art, and the opportunities of such intercourse as they enjoyed that evening, and at all their meetings, were so great that they were beyond all computation. Their political progress, however, as Dr. Carter had already indicated, had not hitherto been so rapid as they could have wished; indeed, some people thought it had been slower than was necessary. On this horizon clouds, and sometimes even storms arose; and they did not complain that it should be so, for, of all conditions, the calm of indifference and negligence was surely the most treacherous and most dangerous. Even thunder and lightning were restorative and beneficent more often than they were fatal and destructive. Criticism, or, as some people preferred to call it, "growling," was a luxury, and a luxury to which those were entitled who purchase their enfranchisement by self-denial and hard work. Such criticism should always be welcome, whilst, on the other hand, the mere complaints of those who only studied self-interest might, with great wisdom, be disregarded. It gave him great pleasure to welcome the President that day within the charmed circle of their cabinet, and he hoped that he might now for many years occupy a prominent position in the Councils of the British Dental Association—a position to which he was fully en-

titled by reason of his long experience, and of the high standing he had for many years maintained as one of the leading dental practitioners of this country. He could promise him one thing—that in the working of the British Dental Association he would have abundant scope for a very interesting study—the study of human nature.

Before he sat down he should like very much to emphasize the remarks contained in the telegram sent to them by Mr. Smale, and to urge upon the young men who had already joined the Association that they should not be content with becoming members, but that they should diligently study its objects, and make themselves thoroughly familiar with its operations. He should like to extend that appeal beyond the range of their membership, to all the young men who were continually going forth from the schools. He would call upon them to grasp the situation, to realise the possibilities and to make their presence powerful within the British Dental Association. He would say to them: The battle we are trying to wage against ignorance and charlatanism is your battle; the interests at stake are your interests, because the future is yours. You should, therefore, take such a deep personal interest in the work we are trying to do, that, by-and-bye, as one after another the veterans are withdrawn, you should be ready and competent to carry forward those objects we all desire, and are, according to our ability, endeavouring to accomplish. The labour, the obligation and the responsibility will be yours; yours also will be the reward if you are faithful to your trust and diligent in your opportunities.

They looked forward to the time when the British Dental Association would include every dental practitioner in the kingdom who had any professional reputation to maintain or who cherished any ambition for the advancement of his calling. For this consummation it is yours earnestly to labour and patiently to wait.

Mr. BLANDY, of Nottingham, next proposed the "Liverpool Medical Charities," and spoke in eloquent terms of the heroic acts performed without hope of recognition or reward by medical men, contrasting them not unfavourably with the heroism in the field of battle that had been alluded to in the toast of the army and navy.

Mr. REGINALD HARRISON, in reply, paid a well-merited tribute to the able address of Mr. Quinby on the importance of surgeons of every branch acquiring dexterity in the use of the fingers, and drew attention to the improvements in progress in the hospital

with which he was personally connected, and to the great degree of perfection to which the system of special hospitals had been carried in Liverpool.

Mr. W. L. JACKSON also responded on behalf of the Liverpool Dental Hospital. The hospital dated back as early as 1860; during that year the patients attended to totalled 696, and during the year 1888 this total had been raised to 25,044. The expenditure of the hospital was slightly in excess of the income, but he looked to the generosity of his fellow-citizens to remedy this defect. They were endeavouring to render the hospital an efficient teaching institution, and were proud to reckon their President among the staff. Mr. Pidgeon proposed "The Visitors."

The Rev. T. W. M. LUND, in replying, expressed his conviction that the objects of the Association were eminently philanthropic, whatever its practitioners might, in modesty, urge to the contrary, and concluded with a warm tribute to the eloquence of Mr. Waite.

Dr. GLYNN said that, speaking on behalf of his medical friends, though visitors, they did not come there as strangers. They felt that they belonged to the same profession, of which the dentists exercised a very important speciality, perhaps the oldest speciality. He hoped that by-and-bye there would be the same direct work in his own profession and in the surgical profession as there was in dentistry. He thanked them most cordially for their great kindness and hospitality, and for the compliment they had paid himself and his professional brethren to meet them.

The PRESIDENT said before the last toast was proposed he had one word to say. There was, in connection with the Association, a Dental Benevolent Fund, and it had been suggested that at the close of each meeting a box for the reception of contributions to that fund should be passed round. He thought it a very good suggestion, and he would now ask Mr. Wormald, the Treasurer, to pass the box round.

Mr. CAMPION said the next toast was one which their worthy President could not very well ask anyone to put before them; he, therefore, rose to ask Mr. Rushton Parker to propose the health of the President.

Mr. PARKER said it was unnecessary for him to enlarge upon the position and character of the President, because they all knew that he was the leading dentist in the city and one of the principal dentists in the north of England. But apart from his high professional character and position, his action in endeavouring to im-

prove the position of dentistry, the status of dental students, and the character of dental teaching, was beyond all praise.

The toast was drunk with musical honours, and "three cheers for his wife."

The PRESIDENT, in responding, said: Gentlemen, I am deeply grateful to you for the kind manner in which the toast has been received. If I have done anything to deserve it, I am sure it has been as much a pleasure to me to do as it has been to you to appreciate so highly our efforts to entertain the members of the Branch Association which has placed me this year at its head. I like the spirit which animates our meetings, and I trust our future gatherings will be, as I am sure our past have been, a source from which we may all draw practical knowledge as well as the pleasure of personal intercourse. Gentlemen, I thank you and I bid you "Good-night."

The amount contributed towards the Benevolent Fund during the day and at the dinner was £10 6s. 7d., which was duly forwarded to the Treasurer.

THE EXCURSION.

On Saturday morning the members, with their lady-friends, assembled at the landing stage, to the number of 120, in acceptance of the President's kind invitation to accompany him on the river to view the docks, grain warehouses, and the works of the Manchester ship canal. The weather was all that could be desired. At Ellesmere port a landing was effected to inspect the canal works. At 1.30 the steamer reached the slip at Eastham, where a substantial lunch had been provided. The health of Mr. and Mrs. Quinby was proposed by Mr. Mansell and duly honoured, and after some other speeches from Messrs. Blandy, Wormald, and Waite, the party re-embarked and were conveyed north towards the mouth of the river, and while rounding one of the lightships, afternoon tea was served in the saloon. The landing stage was reached about 5.30, where a most enjoyable trip was brought to a close.

A balance remaining from the Reception Fund of £7 2s. 0d. was voted a donation to the Liverpool Dental Hospital.

The following Members were duly elected by the Council, viz:—W. S. Hartley (Shaw, Lancs), A. P. Cater (Stafford), D. Sibson (Stockton-on-Tees), Alfred Cocker (Sowerby Bridge). To the

B.D.A. and Midland Branch :—H. Planck and H. C. Smale (Manchester), W. F. Gaskell (Liverpool), W. L. Jefferson (Leeds), C. Rippon (Huddersfield), H. Morley (Derby), members, and C. H. Smale (Manchester), Associate of the Branch.

Southern Counties Branch.

THE Annual Meeting of the above Branch will be held on Saturday, June 22nd, at the "Calverley" Hotel, Tunbridge Wells. The following will be the order of proceedings :—

11.0 a.m.—Meeting of Council.

12—3.30 p.m.—Excursion. Members and Visitors are kindly invited by the President to join him in a visit to Penshurst Place, lunch being provided at the "Penshurst Arms." Coaches will start from the "Calverley" Hotel at twelve o'clock, arriving at Penshurst about one o'clock, after a drive through some typical Kentish scenery. After lunch, the party will have an opportunity of visiting Penshurst Place. The Castle itself, the ancient home of the Sydney Family, contains a splendid collection of pictures and old armour, and the Park is considered one of the finest in England.

3.30 p.m.—General Meeting. (At the General Hospital.) After the necessary formalities the out-going President, Mr. J. Cornelius-Wheeler, will deliver his valedictory Address. The President will then take the Chair, and after his address the Officers and Council will be elected. In accordance with the bye laws three members of the Council retire this year, and the ballot has decided that Messrs. D. W. Amoores, M. L. Bell, and C. H. Bromley shall retire. A recommendation from the Council, to include the counties of Berkshire and Wiltshire in the Southern Counties Branch, will be brought forward.

Papers will then be read as follows :—"On the General and Local Treatment of Pyorrhœa Alveolaris," by E. S. Kerr, Esq., L.D.S.I., D.D.S. "Dental Education," by Walter Harrison, Esq., L.D.S.E., D.D.S. "Vulcanite Work," by J. H. Reinhardt, Esq., L.D.S.I. Gentlemen who wish to introduce other subjects will much oblige by giving early notice to the Hon. Secretary.

6.0 p.m.—Dinner. Tickets, 7s. 6d. each (without wine), to be obtained of the Local Hon. Secretary, Frank Bell, Esq., Vilsbiben, Tunbridge Wells, till Wednesday, June 19th, after which an extra 2s. 6d. will be charged.

Members will oblige by forwarding their Annual Subscription of 5s. to the Hon. Treasurer, J. H. Redman, Esq., 61, Old Steine, Brighton.

The Subscription of One Guinea to the Parent Association should be sent to the Hon. Treasurer, F. Canton, Esq., 40, Leicester Square, London.

The following (necessarily incomplete) List of Trains may prove useful to members:—

FROM LONDON (IN TIME FOR EXCURSION).

Charing Cross 8.10 a.m., arrive at Tunbridge Wells 9.50, *via* Sevenoaks.

Victoria and London Bridge 9.30 a.m., arrive at Tunbridge Wells 11.4, *via* Croydon and Oxted.

FROM LONDON (IN TIME FOR GENERAL MEETING).

Victoria 1.30 p.m. and London Bridge 1.40 p.m., arrive at Tunbridge Wells 2.52, *via* Oxted.

RETURN TRAINS TO LONDON.

Last South Eastern Train to London, 9 p.m., arrive at Charing Cross, 10.35.

Last L.B. and S.C. Train 8.40 p.m., arrive at Victoria 9.59 and London Bridge 10.5.

Leave Brighton 9.32 a.m., arrive at Tunbridge Wells 10.52.

Leave Brighton 1.40 p.m., arrive at Tunbridge Wells 3.12.

Leave Tunbridge Wells 9.20 p.m., arrive at Brighton 10.37.

Leave Eastbourne 8.45 a.m., arrive at Tunbridge Wells 10.52.

Leave Tunbridge Wells 9.20 p.m., arrive at Eastbourne 11.47.

Leave Hastings 10.15 a.m., arrive at Tunbridge Wells 11.5.

Leave Tunbridge Wells 10.6, arrive at Hastings 11.10.

MORGAN HUGHES, *Hon. Sec*

4, Wellesley Villas, Croydon.

Central Counties Branch.

THE annual meeting of the above branch will be held at Newark-on-Trent, on Saturday, June 22, 1889.

The following will be the order of proceedings:—

12.0.—Mr. King invites to luncheon.

1.0.—Meeting of the Council.

1.15.—President's Address. General Meeting of Members for Election of Officers, &c.

1.45.—Visit to Messrs. Cafferatta's Plaster Works, the largest in the country, where the process of manufacture will be explained by one of the principals.

3.0.—Excursion on the Trent in Mr. King's House Boat, *Bijou*, to Hazelford Ferry, a distance of ten miles.

6.0.—Dinner at the "Star and Garter" Hotel," Hazleford Ferry. Tickets 4s. ; Ladies 3s.

Ladies are especially invited and will attend the dinner, but for those not caring to do so, tea will be provided on board the boat.

Beds can be secured at the "Star and Garter" Hotel, Hazleford Ferry, or at the "Clinton Arms" or "Ram" Hotels, Newark, by letter. Trains leave Bleasby Station, one mile from the Ferry, at 9.22 p.m. for Derby, and 9.10 for Lincoln.

JOHN HUMPHREYS, *Hon. Sec.*

Eastern Counties Branch.

THE Annual General Meeting will be held in the Board-room of the Hospital, Colchester, on Wednesday, June 26th, the President, Frank Hall, L.D.S.I., in the chair.

President-elect, Amos Kirby, L.D.S.Eng.

The following will be the order of proceedings :—

9.0 a.m.—Meeting of the Council.

10.0 a.m.—Business, papers, &c.

1.0 p.m.—Adjournment for luncheon.

2.30 p.m.—Continuation of papers, &c.

The following communications have been promised :—"An Improved method of Crowning Roots," by R. P. Lennox. I. "Extraction of Certain Lower Wisdom Teeth." II. "Separation between the Superior Central Incisors," by R. W. White, M.R.C.S., L.D.S.Eng. "On the Treatment of Children's Teeth," by E. A. Dixon. "On Dental Ethics," by G. Cunningham, M.A.Cantab., L.D.S.Eng., D.M.D.Harvard. Casual communications, &c. Mr. Lennox will show his new crown, also his latest improved pneumatic wallet.

Annual dinner at the Cups Hotel at 7.30. Charge, 7s. 6d. each (without wine).

Time permitting, it is proposed, under guidance, to visit some of the following places of interest :—The Castle, a fine old Norman structure, containing the museum of the Essex Archæological Society, very rich in Roman and other antiquities ; St. John's Abbey and St. Botolph's Priory, both very interesting Norman ruins ; the remains of the old town walls, ancient churches, and one or two valuable private collections of Roman antiquities ; the infantry camp, cavalry, and artillery barracks, &c.

All members of the Association are cordially invited to attend the meeting.

Trains leave Liverpool-street at 9.3 a.m., reaching Colchester at 10.42; at 5.0 p.m. (slip carriage), arriving at 6.11; another at 5.30 p.m., arriving at 6.46 p.m., in time for the dinner.

Trains leave Colchester for London at 8.33 and 9.20 a.m., arriving at Liverpool-street 10.10 and 10.30 respectively.

The Honorary Secretary will be glad to receive the names of gentlemen who intend being present at the meeting or dinner.

W. A. RHODES, *Hon. Sec.*

53, *Trumpington Street, Cambridge.*

ORIGINAL COMMUNICATIONS.

Finger Training in Dentistry.*

By HENRY CLAY QUINBY, L.D.S.I.

GENTLEMEN OF THE MIDLANDS,—It has been your pleasure to select me to be your President for the ensuing year, with most gratifying unanimity, and I thank you most heartily for the honour you have done me, while I feel unhappily conscious of my inability to do honour to the position in which you have placed me.

You are accustomed to hear from your President, at the commencement of his year of office, an address on some professional topic, but I doubt if many of you can be aware of how difficult it is to find a subject which is strictly within our somewhat limited range, and which has not already been threshed out by discussion.

Turning this matter over in my mind, and, in so doing, necessarily looking back through all the years of my professional career, it seemed to me that, although so much has been done in the way of professional education; although we are beginning to quite fully realize that the practice of dentistry means something more than extracting teeth and replacing them with others of our own construction; although we no longer “stuff” an aching tooth to cure the pain, and feel—or express—surprise the next day to find that the pain has been greatly intensified, and regret that, such being the unexpected result, we are forced to the unwelcome

* Read at the Annual Meeting of the Midland Counties Branch, held at Liverpool, May, 1889.

suggestion of the key as the only known remedy for such suffering ; although we have emerged from the not too reputable handicraft position which was all we could claim in the early part of the nineteenth century, into a recognized professional status, there is yet much to be done before we can feel that all of our belongings are on a strictly professional plane.

This work of further development s, and must be, the work of the young practitioners who are now coming forward to take the place of those of us who have lived through the dark ages of ignorance and trade secrets into the light of education and interchange of ideas, but it may well be that, as the teachings of experience must always have a specific value, a few hints from an old professional hand will be acceptable as aiding progress. It is only by this interchange of ideas, the helping each other to new thoughts and new methods, and the comparing and combining of these new suggestions, with careful noting of results, that we lay up the stores of practical wisdom which will be available to us when our fingers have become skilled and effective in manipulative ability. I was struck by the singular applicability to our practical work of some remarks of Sir Frederick Bramwell, at the meeting of the British Association at Bath, last autumn. Speaking especially to civil engineers, he said : " It is often said, in disparagement of the mechanical applications of science which are the special function of the civil engineer, that whatever man needs he can make by the labour of his own hands, and that he fashions it better so than by calling in the aid of a machine. The saying is perfectly true in a certain sense. There is no more delicate machine than the human hand intelligently trained and guided, and, what is more, there is no human work in the world which is not directly or indirectly fashioned by men's hands. But all civilization rests ultimately on the fact that man, and man alone, can make tools to aid the work of his hands." Now there can be nothing more certain than that the mere cramming of the head with knowledge, without a corresponding training of the fingers to execute, will be of very little practical value in dentistry, less even than in surgery, and we know that the surgeon who can do, will make a more important place in the world than he who can only advise. Theory and practice, especially where mechanical skill is necessary in the practice, are distinct results of training. We train the mind to enable us to formulate a plan, to decide what we are to do and how it is to be done, and all this is necessary

before the fingers, the executive servants of the brain, can be expected to do the work. Therefore we need books, lectures, and clinics to train the brain, but the training of the fingers takes as much time, or even more, than the mental training, and the reason that so many men fail to be good operators is because they neglect this part of their education ; they cram the head with theory, and when they are called upon to put theory into practice the stubborn fingers cannot be induced to execute the orders of the master will. And why? Because the will has not learnt the management of the machinery at its disposal. We hear sometimes of born musicians, but did you ever know a skilful pianist or violinist who had not spent days, months, ay, years, in training his fingers to do their part? Does he not even begin to train the fingers when he begins to teach the mind the A. B. C. of music? In fact, do not the fingers instantly execute the idea that is in the mind, because they are trained to work simultaneously with the mind? Now, where will you find a necessity for more delicate, gentle, yet firm and trusty touch than in the work of an operating dentist? It is not the want of theoretical knowledge now that makes the number of good operating dentists so ridiculously small : it is that men think they can be dentists by getting a college diploma, which, it very often happens, does not make them practical men.

A natural mechanic is always shaping something with his hands, and it would not be far wrong if I were to say that only natural mechanics are fit to be dentists, because it is only those who are always using the fingers in some delicate mechanical work who can ever acquire the necessary delicacy of touch to make good operators. It is not enough for our young men to attend courses of lectures and read standard works until they can pass certain examinations in theory and fact. This will not make them dentists, any more than mere apprenticeship at the work-bench will do it. The workroom training is quite as essential as any part of the education, and is in itself a most useful teaching of the fingers, as any other mechanical employment would be, though, of course, the more steadily this part of the training is kept in the groove of ultimate usefulness the better it will be. But there must be something more than this to make the man a dentist. He must take his share in the work of the Dental Hospital, always, if possible, under the eye of an able paid demonstrator. Here is work which ought to be the work of the best of the newly-qualified men in dentistry, as in surgery the appointment of house surgeon is usually given to some

newly-qualified man who has shown marked ability in his educational progress. One of the chief uses of the great charitable institutions, which we call hospitals, is the teaching. To the needy sufferer it is a boon of inestimable value that he can be received at one of these establishments and treated with as much skill and care as kings can command ; but to the student, the privilege of watching and noting every phase and development of this treatment and its results is, in every respect, as great and priceless a boon—for in no other way can he ever see such clinical work, as a class of students could not be permitted to cluster round the couch or chair of private practice. But there is much of the work of hospitals which can be done by newly-qualified men, and by students under their supervision. Now, there are cases which men in full practice can scarcely be expected to give their time to, and these are cases where self-confidence and finger training may be acquired by younger men ; and it may even be true that the man who has recently been taught will be a better teacher than one whose qualification is of older date. At any rate, it is good for the newly-qualified man to be still learning while he is teaching others, and he can afford to give more time to lucid explanation of the minutiae of manipulation while the work is progressing. Thus, it seems to me that the appointment of house surgeon in our dental hospitals should be only a temporary appointment, and should, as far as possible, be in all cases given to the best man among those newly qualified.

I have already alluded to the work-room training as an important part of the education of dental students, but I want to emphasize what I then merely suggested, that a mechanical mind is as important in every respect to the dental student as it would be to the engineer, because there is scarcely anything in dental practice where a quick perception of ways and means, and readiness of invention, are not essential to success. No two cases will ever be exactly alike, and we must be prepared to meet variable conditions with variable treatment. We must always be learning something if we take an interest in our practice. A professional education is never complete. We shall often fail to perfect the ideal operations which we have had in our minds, but our failures should teach us as much as our successes. We can see where we fail, and why, and this should help us greatly in guarding against a failure the next time we have a similar case. We must keep our ideal high and do our best to reach it, but we must not be dis-

couraged when we fail; and if we are satisfied that we cannot accomplish the end we aimed at, let us frankly acknowledge it and try something else. The failure will usually be in the want of manipulative ability more than in a faulty plan, so we come back again to the absolute necessity for finger training, and this goes on all through our professional lives, so that we may feel fairly assured that the ideas we fail to carry out to our satisfaction in early life will be easy of execution as practice gives our hands the necessary dexterity. It is natural, however, to be sanguine in youth, and we may find that we have erred in judgment—a greater fault than a failure to execute our conceptions, because, as professional men, we should have made ourselves aware of all the possibilities before we decided on a course of treatment; and although it is sometimes justifiable to try a doubtful experiment, it is best that it should be well understood to be of a doubtful nature. But an error in judgment is only another lesson in our training, and we are none of us infallible. Experience is the teacher whose lessons touch us most deeply, because they affect us through our self-love—by elevation if we do something brilliant, by depression if we fail; but humiliation is sometimes good for us, as it may prevent a too sanguine nature from leading us into egotism and professional bigotry.

As professional men, our object is to save teeth, and to save them as nearly perfect in form and health as possible; but we must not allow ourselves to think, as some of our teachers would have us do, that there is only one way in which they can be saved. On the contrary, there are many ways, and good judgment is needed to enable us to choose the remedy which will best suit all the peculiarities of the case. What may be admirably suited to one case may be quite unsuitable to another; for instance, a filling which might be the best possible thing for a cavity with strong walls in the grinding surface of molar, might be a most mortifying failure in a large distal or mesial cavity in a bicuspid. There are many considerations which should influence the treatment of decaying teeth. We have been accustomed to talk of temporary and of permanent fillings as though the material used in those fillings constituted permanence or the opposite, but these words convey an altogether erroneous idea. In certain conditions of the mouth, and in certain localities, a simple gutta-percha filling will more effectually check decay than the most perfect gold filling that could be made, while, perhaps, a little later the con-

ditions will have so improved that the harder material can be used with great advantage. Do not think I mean to depreciate the value of gold as a stopping for teeth ; on the contrary, I think nothing else can compare with that metal when it is used with judgment and skill ; but I will say this, the man who is so bigoted that he can ignore the indications which should determine his course of treatment of a mouth ; the man who has but one idea of treatment for all cases, and could say that any tooth which is worth filling at all can, and should be, filled with gold—as was so strongly said in America a few years ago by those who opposed what was called the “ new departure theory ”—I say such a man is no more deserving to be called a professional man, in distinction from a handicraftsman, than is the man who, when a patient comes to him to get relief from pain, tells the sufferer, or permits him to think, that a filling can possibly give the desired relief. It is unnecessary to say that a filling never cured a real tooth-ache, but I make use of this illustration because it is not long since one might have heard of patients being so treated.

It takes years of experience to teach us what filling materials will best suit the cases we have to deal with. No hard and fast rule can be laid down for guidance save this, to make each case, each tooth, and each cavity in a tooth, a special study, to see why it has decayed, whether the conditions which have caused it to decay still remain in force to continue the work of destruction after the tooth is filled, and, if so, how we can best counteract such a result, whether by shaping the cavity or by selection of a particular material for the stopping. When we fill a tooth we, of course, expect to arrest the decay which has been going on in that tooth, and to prevent extension of the destructive process to the pulp, which would result in the devitalization of that portion of tooth structure, with probably a great deal of pain before the devitalization could be complete. In a word, we expect to prevent pain, not to cure pain. Of the treatment which would be necessary to cure pain I will speak later on, but what I wish to say now is that we shall generally find that the more urgent the case the greater will be the necessity for what is usually called temporary treatment ; I mean that the more rapidly the process of decay goes on the more impossible it becomes to check it with metallic stoppings. There are substantial reasons for this. We know that the dentine is often very sensitive, and there can be no reasonable doubt that this sensitiveness proceeds from something

very like inflammation, although I remember reading, a few years ago, a paper in which it was urged that a state of inflammation could not exist in dentine. But I do not see any occasion for such hair-splitting as this; we have to deal with a condition of pain, and whether we call it by one name or another matters little so long as we call it by a name which conveys the idea. I contend that it is inflammation of those delicate fibrils of soft tissue which occupy the dental tubuli and maintain a communication between the outposts and the base of supplies, if I may use a military simile—but I am quite ready to accept any other descriptive word when I can hear of one which indicates this condition more explicitly. Let us say, then, this sensitive condition of the dentine is a sort of inflammation which is caused by the action of vitiated oral secretions upon the calcareous substance of the teeth, thereby exposing more and more of these fibrils to inflammatory disease and death. Now when any of the other soft tissues have passed through those stages the surgeon would remove the slough, and cut away as much as he could of the diseased parts in immediate contact, and then apply such dressings as might be necessary to restore a healthy action to what was left.

We certainly should not expect a clever surgeon to amputate a limb which was beginning to be affected by gangrene, and immediately turn the case over to the manufacturer of artificial limbs to have one of his appliances fitted to the surfaces so recently operated upon. I do not mean to imply that this simile will be applicable to all, or even a very large proportion of the cases we shall have to treat; but I am, if you will remember, discussing what I have alluded to as urgent cases which I do not consider fit to be treated at once with what we are accustomed to think of as permanent fillings; such cases, for instance, as we shall find very often in the mouths of child-bearing women, of persons just recovering from an illness which has affected the mucous surfaces, and of young people during the constitutional changes of puberty. Such cases cannot be treated successfully if we attempt to treat them with that degree of thoroughness which the man of one idea of treatment will tell you is necessary in all cases. As professional men it behoves us to see that the diseased surfaces we have to treat are in a fit state for the restorations which it is our business to apply with our own hands, instead of, as in the case of an amputated limb, calling in an instrument maker to do it for us. We find a number of teeth

superficially affected with a kind of carious disease which makes them so sensitive that the patient cannot bear to touch them with a brush, scarcely to have food touch them, and, of course, shrinks with dread from the idea of allowing anyone else to touch them ; and here, if ever, we want skilled hands as well as heads, for a sure and certain hand and a sharp instrument are worth more than all the pain-obtunding drugs in the world. A very slight excavation, sufficient to leave fairly clean undercut margins—and they will almost always be sufficiently undercut from the nature of the decay—will enable us to apply what may very well be called a dressing. We dry the cavity, touch the cut surfaces with carbolic acid as strong as it can be obtained in a liquid condition, but no more of it than just enough to allow us to feel a certainty that it is there, and then fill the cavity with gutta-percha. All this can be done with a very few touches and in a very short time ; the carbolic acid acts in a double capacity—as a solvent for that part of the gutta-percha which is in immediate contact with the tender surface of dentine, giving it a more adhesive character, and therefore more effectually protecting the tender surface, and as a destroyer of any micro-organisms which may be present, though these will be, as I think, rather a result than a cause of the caries. The gutta-percha is a non-conductor, and so will give the sensitive surfaces protection from thermal shocks, and it is a sufficient protection from the acid oral secretions to check, if not to stop, the progress of decay, therefore it will give the tooth a chance to recover from its condition of morbid sensibility, and probably, later, to permit a more permanent operation ; and an hour or two of time will suffice to make a mouth very comfortable even where there are many cavities.

And now let us look for a moment at what the handicraftsman of one idea would do in this case. Of course, he would see that there was no deep-seated caries to contend with ; therefore, there could be no reason why the tooth should not be properly (?) filled. It hurts dreadfully ; Oh ! yes, but that must be borne ; we cannot do these things without giving a little pain, so the patient, not, perhaps, very strong to begin with, must put up with, first, a little wedging apart of the teeth to make room to work ; this causes a more or less acute soreness in the socket, so that pressure on the tooth gives variety to the pain, and adds to the discomfort of the operation ; but it is all right, it must be borne ; then every particle of disintegrated bone must be removed, and a proper gold

filling inserted with a little aid from the mallet, for that is the only way a conscientious dentist can allow himself to treat such a case. It takes a long time, but it cannot be done hurriedly. Yes, there are several more which have to be treated in the same way, but it is the only way to save your teeth ; and so the work goes slowly on, if the patient has self-command and staying power. But the teeth are far from being comfortable. A metallic stopping which is a quick conductor has been placed on a surface of dentine already abnormally sensitive from disease, and the poor tooth is painfully conscious of every mouthful of food or drink which is above or below the normal temperature—even a breath of cold air causes pain. The tooth has no chance to recover ; the filling acts as an irritant, the fibrils of nerve tissue continue to break down, and naturally act as a destroying agent on the calcareous substance which surrounds them ; the teeth are too sensitive to do their natural work, and, therefore, do not get the natural attrition which would come from the mastication of the food. The brush still hurts them, so they do not get properly cleaned, and the result of all this is that the fillings do not prove to be permanent, the patient is all the more dissatisfied because of the expectation of permanence after all the suffering, and all the more ready to endorse the reputation for cruelty so readily accorded to the dentist even when there is much less reason for it. The patient finds it is a hopeless business to try to save the teeth, and thinks it is better to “bear the ills we have than fly to others that we know not of.” There is no doubt that dentine which has been decalcified until it is in the condition of tough cartilage, may, if it is protected from the direct action of the secretions, regain all the density it has lost, but to secure this result the protection must be effective, and other conditions favourable ; if the dentine has been so deeply affected that there is but a very thin lamina of quite sound bone immediately over the pulp, it is always a question whether we shall be able to preserve the pulp vitality—mind, I do not say the vitality of the tooth, but that is a point I shall allude to later on—and if the pulp cannot be kept alive there can be no need for us to take the risk of allowing it to give all the pain it must give before it dies a natural death. On the other hand, if the disintegration of the dentine has caused a breaking up of the cartilage itself we cannot hope for recalcification, as the matrix in which the lime salts should be deposited would in that case be destroyed. Experience alone will enable us

to decide whether it is best to devitalize at once, or to try to keep the pulp alive ; and although we may make some mistakes it is better to make them in the latter than in the former direction, therefore it is well to have gutta-percha prepared in varying degrees of hardness, from very soft to quite hard, and when we use the softer kinds to let it be with a distinct understanding that it is only as a dressing, rather than as a filling, the object being to assist nature to throw off a condition of acute disease, and to resume such a state of health as will permit an operation to effectually restore the usefulness of the tooth. Such a dressing might remain a fortnight or a month, and then a little more excavation might be possible, and a more substantial dressing or filling to remain a little longer, and sometimes it will be better to attempt nothing more substantial than gutta-percha for several years ; and generally the patients will be well satisfied to have the extra trouble and expense if they can be saved the pain.

The treatment of toothache is a matter which has not had, by any means, a proper amount of consideration in our profession, and if there is any one thing which more than another makes us undeserving to be ranked as professional men it is the readiness with which we allow ourselves to be persuaded, or influenced, by our patients, to save them all trouble by at once extracting their aching teeth. Patients must be made to understand that they do not come to us to tell us what we are to do for them. The professional status presupposes a special knowledge of a subject beyond what is ordinarily acquired by the laity ; therefore, it is only a duty to advise those who seek our aid with the best judgment our special knowledge gives us, and if our advice is disregarded, and a patient stubbornly persists in demanding that certain things be done which are not in accordance with what our judgment teaches us are for that patient's best interests, it may be our further duty to refuse to treat the case at all ; we might lose the patient for the time, but we should not lose his confidence, and that would bring him back to us in time, if he was worth having ; or at any rate, we should have the satisfaction of knowing that we had done our duty even to our present disadvantage.

The cases of toothache which ordinarily present themselves to us are simple enough, and they yield to treatment readily enough. Odontalgia, or what I should call primary toothache, is caused by a congested condition of the blood vessels of the pulp, which would naturally be inclined to expand, but cannot do so owing to

the unyielding nature of the surrounding walls. Thus, there is great pressure and consequent pain, ultimately resulting in death of the pulp from strangulation. This is the whole case in a few words. There are cases where this congestion is the result of obscure causes, and many pages might be written on the various pathological conditions which may cause congestion of a tooth pulp, but it will suffice for our present purpose to take the ordinary case of caries extending to the neighbourhood of the pulp. It will be observed that the pulp becomes congested while there is still a thin lamina of only partially disintegrated bone over it, and these are the cases which are supposed to be capable of being preserved alive by the process of capping. But I think experience has proved that there is so much pain in the process of reducing the congestion, and so many failures to preserve vitality—failures which may not be apparent for a year or two, but which are none the less failures of this operation—that I, at least, am convinced that there is less harm done by immediate devitalization and subsequent antiseptic treatment than by attempts to keep a pulp alive by capping. As an instance, however, of the facility with which one may persuade oneself of the success of such an operation, I may mention a case which occurred while I was a student; I was watching the operation of preparing a lateral incisor for gold filling, by an operator who, though rather rough in his treatment, made excellent gold fillings; while excavating he unexpectedly made a minute exposure of the pulp, causing it to bleed, so that I could see the blood. He, however, finished the excavation, wiped the cavity with creosote, and filled it immediately with gold, without any other treatment, and to my certain knowledge that tooth gave no trouble until two years afterwards, when the tooth showing indications of periostitis, I myself removed the filling, and found a mass of putrescence in the pulp cavity. Now, this was a case where, if there had been any attempt at capping, it might well have been claimed for those two years that capping was a complete success (and you must remember that this occurred more than thirty years ago), but although the tooth was saved it would have been a better tooth if it had been at once devitalized, the pulp removed, and the pulp cavity filled, so as to prevent the periostitis. But this is digression. I was talking of devitalization as one step in the treatment of toothache, but it is only a step, and if we stop there—as, I am sorry to say, so many do, although there is so much talk now of antiseptic treatment—we shall not

well deserve to call ourselves professional men. But the fact is, that a large proportion of our own specialty have only a theoretical belief in the successful treatment of, or in the prevention of, alveolar abscess. Nevertheless, it is a matter of extremely rare occurrence for periostitis, or its more advanced state, alveolar abscess, to be caused by anything else but a putrid pulp, and it is merely a matter of finger work to remove the dead pulp before it becomes putrid, or to open up the roots of a tooth after a putrid pulp has done its poisonous work, and, by the use of antiseptics, kill the poison, and then to fill up those roots so that no more poisonous matter can ever accumulate there. This is really a very easy thing to do. It wants trained fingers, and now that such delicate instruments are made for the work, the training of the fingers is a different matter from what it was with the comparatively clumsy and inefficient instruments of thirty years ago. Every operator has his favourite method of treating these cases, but the general principle is always the same. We must so shape the cavity of decay, or drill the tooth in such a position as to give us free and direct access to all the roots. We cannot, for instance, make satisfactory work of the roots of a molar from a distal or a buccal cavity, but we must drill from the grinding surface so that the instruments will pass directly into the roots without making an acute angle. We cleanse these roots as thoroughly as possible, taking care not to force the putrid contents of the roots through the apical foramen, treat with antiseptic dressings until the poisonous germs are sterilized, and then fill up the roots so as to prevent the recurrence of putrid accumulations. It only wants care and thoroughness, and it takes time; repeated visits of the patient may be necessary, and it is to be hoped that there will be a proper appreciation by both patient and operator of the value of a tooth so saved. There will be occasional failures; an abrupt bend in a root may prevent the instruments from reaching the end of that root, when you suppose you have done so, and have good reason for so supposing; there may be a nodule of secondary dentine in a root, obstructing the passage of your instruments, diverting your drill when you attempt to remove it, baffling you altogether; or with a nervous, fidgety patient your dressings may be constantly displaced, and, what is still worse, replaced by the same fidgety patient, as I have known in the case of an arsenical dressing, with the arsenic pressed up under the gum between two teeth, causing sloughing and exfoliation. These and other causes

of failure, sometimes real and sometimes fancied, may make you feel hopeless of success in a few instances; but failures from all causes, giving them all their full value, make so insignificant a total that I am sure fully 90 per cent. of the teeth which are intentionally devitalized, and of those in which the pulps have become devitalized by accident or unknown causes, and have remained to produce alveolar abscess, can be saved, so as to be good, useful, and comfortable teeth. But these teeth are usually spoken of as dead teeth, and they are not dead teeth; a tooth could not be tolerated in the mouth if it were quite without vitality. Common sense scouts the idea as an impossibility, and it is not therefore surprising that nearly every thoughtful surgeon refuses to believe in it. Let us then no longer call them dead teeth, but pulpless teeth. Devitalization and removal of the pulp does not take away all the vitality of the tooth. Although the dentine may be cut and drilled without causing any pain, the tooth cannot be dead so long as the roots are invested by a living membrane, and it is the blood vessels of this membrane which carry on the work of nourishing the tooth after the pulp is extirpated, for even a tooth cannot live and fulfil its functions without its proper nutriment. These blood vessels require a little time to adapt themselves to the new demands upon them, and, doubtless, this is the reason that for the first two or three months after losing its pulp, even in cases where there has not been any poisoning from putrescence, a tooth is liable to a slight feeling of elongation, and a soreness in the socket; but this does not become unbearable, and in a healthy subject it is rarely more than a noticeable sensation. But it is there; it is a weak point which, when the general strength is below par, may make itself felt as a decided discomfort; but it need not cause any alarm, and it yields readily when some counter-irritant is applied on the gum. We shall often meet with cases where the pulps of teeth have lost their vitality after, perhaps, days or even weeks of pain, and we shall find dead pulps in teeth which have never, so far as the patient can tell us, been a source of pain. Death of a pulp may occur from a blow, from a fall. I have seen plenty of instances where it has been caused by severe wedging to make room for a filling, or by malleting a gold filling into a tender sensitive tooth, and, no doubt, many of these cases may go on for years without causing any serious disturbance, although they are always a source of danger to the person who retains one of them, untreated, in the mouth.

The attack comes when from any reason the general strength is a little pulled down, when there is unusual fatigue or anxiety, when there is some sudden change in the habits of life, when one is mountaineering, or grouse shooting, or fishing, often when one is far from scientific aid, and all the pleasure and benefit of the change of air is taken away. Some time or other the effect of this poisoning from a dead pulp is certain to make itself felt, unless, from complete disintegration and breaking down of the walls of the tooth, the gases of decomposition are allowed to escape freely into the mouth, instead of forcing their way through the apical foramen to act upon the peridental membrane. It is, therefore, a simple duty, as professional men, not only never to leave a dead pulp which we have ourselves devitalized, in a tooth, but to examine teeth which have been previously treated to see if there are any indications of dead pulps, and, if so, to open them up and make the teeth safe. It is our duty to prevent pain quite as much as to relieve pain, and our patients will soon find out and appreciate the endeavour to do so.

Gentlemen, I have not offered you anything new. For nearly forty years I have been familiar with dentists and the practice of dentistry, and quite forty years ago I assisted a dental practitioner in the preparation of instruments, made of the hair springs of watches, for the removal of devitalized pulps from teeth. And I know it was even then done successfully: therefore I am quite aware that I am only repeating an "oft-told tale," but daily experience teaches me that there is still a need for urging attention to this matter, and this must be my excuse for troubling you with what may have been a wearisome subject. But I thank you for the patience with which you have listened to me.

REPORTS OF SOCIETIES AND OTHER MEETINGS.

The Odontological Society of Great Britain.

THE monthly ordinary meeting of the Society took place on June 4th, at the rooms, 40, Leicester Square, Mr. HENRY SEWILL, M.R.C.S., L.D.S., President, in the chair.

The minutes of the preceding meeting having been read, Mr. Sidney Spokes signed the obligation book and was formally admitted a member of the Society.

Mr. James Parkinson, owing to his failing health, having re-

signed ordinary membership of the Society was, after some eulogistic remarks from Mr. SEWILL and Mr. BROWNE MASON, proposed and elected an honorary member by acclamation.

Mr. Charles Winterbottom, M.R.C.S., L.D.S., was balloted for and elected a resident member of the Society.

Mr. GEORGE CUNNINGHAM read, on behalf of himself and Mr. Robinson, a preliminary communication upon the discovery of a crystal-forming micro-organism in the mouth.

At the suggestion of the PRESIDENT, discussion upon the communication was deferred until after the reading of the expanded contribution, which will be taken later in the session.

Mr. J. C. STOREY (Hull) communicated a case of fracture of the incisive portion of the superior maxillæ. The patient, a boy aged eight, had jumped with his mouth agape, and struck his upper jaws against the bar of a perambulator, causing a fracture between the inter-maxillary bones and superior maxillæ, resulting in a projection forwards of the four superior incisors at an angle of 45°. There was little swelling or hæmorrhage. The displacement was reduced under chloroform by steady backward pressure, the fragments resuming their normal position with an audible click. Impressions were then taken and a vulcanite plate made capping the molar teeth to raise the bite. To this was attached a dental alloy retaining band. This fitted with pressure the fractured portion. After wearing for a month the union appeared to be complete. The incisors appeared to have living pulps.

Mr. BETTS mentioned a similar case, that of an amateur bell-ringer who was carried off his feet by the pull of the bell-rope, and his jaws struck against a portion of the belfry, causing fracture of the incisive portion. The displacement was reduced under gas and the case did well, except that the pulps of the incisors were killed.

The PRESIDENT remarked that fractures of the jaws in young children usually gave satisfactory results after treatment.

Mr. BROWNE MASON then read an account of a case in which death followed in eight hours the extraction of a tooth. The patient, a female aged 43, had suffered from headache and neuralgic pains for some years. The tooth was extracted by a surgeon without anæsthesia being obtained, and the operation presented no difficulty. She became a little hysterical after the extraction, and the respiration suddenly stopped. In spite of artificial respiration being practised for several hours, natural breathing was never reinstated. The surgeon in attendance

pronounced the death to be due to apoplexy. No *post-mortem* examination was made. Mr. Browne Mason felt the interest of the case centred about the fact that no evidence had during life given a clue as to the diseased state of the cerebral arteries. He queried whether, from the action of nitrous oxide upon the brain in this case, it would not have been wiser, had an anæsthetic been given, to have selected ether or chloroform rather than that agent.

The PRESIDENT dwelt upon the fact that as no *post-mortem* had been made, any discussion upon the cause of death was gratuitous.

Dr. FERRIER acquiesced in this, and added that, as the best observers doubted whether a death had ever been distinctly traced to the action of nitrous oxide, he should be cautious in saying whether or no it would not have been wiser to employ that anæsthetic. It was a pity no autopsy had been made, as this seemed to have been a test case which might have thrown much light upon reputed deaths from nitrous oxide.

Dr. FERRIER, F.R.S., then read a paper "On some Relations of the Fifth Pair of Nerves." Dealing with the morphology of the nerves, he pointed out that since the time of Sir Charles Bell, the fifth nerve has been regarded as the homologue of a typical spinal nerve, the *portio minor* representing the anterior root (motor division), the *portio major* with its Gasserian ganglion taking the place of the posterior. Gaskell's recent researches were quoted to show that these views must be modified. This observer has shown that spinal nerves consist of two distinct systems—one, the *Somatic*, has a distribution to structures springing from the epiblast, and that portion of the mesoblast which forms the mesoblastic somites (muscles and structures of animal life). These, the somatic nerves, have an afferent, posterior, and gangliated root distributed to sensory organs, and an efferent derived from the anterior horn of the spinal cord, supplying the skeletal muscles. The other system, the *Splanchnic*, supplies structures derived from the hypoblast (visceral skeleton, walls of blood vessels and hollow viscera). These nerves, smaller than the somatic, have likewise an afferent ganglionated root (the ganglia of the so-called sympathetic system) and an efferent which supplies muscles of the visceral skeleton, including the face, jaws, &c. These views concerning the spinal throw light upon the functions of some of the cranial nerves. Thus the third, fourth, portio minor of fifth, sixth, and seventh, now purely motor, were once complete

segmental nerves, with an afferent and efferent root, the remains of the ganglia being still capable of demonstration (Gaskell). Hence the portio minor of the fifth is not the homologue of the anterior root, but is a fully formed segmental nerve, the sensory portion of which has undergone complete degeneration. The sensory portions of the third, fourth, fifth, sixth, seventh, have been replaced by the sensory branches of the fifth.

The motor divisions of the fifth and seventh are essentially splanchnic efferent nerves, the muscles they supply belonging to the visceral group. Referring next to the nerves of the medulla, the lecturer pointed out that, while the glossopharyngeal and vagus innervate the alimentary canal and viscera, the somatic afferent branches are contained in the sensory division of the fifth. These morphological data help to explain the pathology of some reflex or sympathetic neuralgias of the fifth. Visceral irritation, unlocalised and obscure, is apt from the close relation of the central origin of the nerves of the somites and those of the viscera, to become projected into the somatic regions. Thus are explicable, headaches, toothaches, and so forth, which arise in connection with various forms of visceral disturbance. Pre-existing weakness in any area supplied by the fifth, as for example, a carious tooth, would probably determine the localisation of visceral reflex pain. The locality of trigeminal pain is often no index of its local origin, for a general neuralgia of the fifth, may be due to some related visceral nerve, or to some branch, *e.g.* the dental, of the nerve itself, not the seat of conscious suffering.

In reference to the supposed relations of the fifth to the muscles of the palate, viz., that the levator palati and azygos uvulæ are supplied by motor fibres from it, Dr. Ferrier pointed out that this was probably erroneous, and that the true origin of these motor fibres is in the seventh nerve, through the petrosal branches, through the Meckel and otic ganglia. Lesions about the geniculate ganglion are assumed, but probably wrongly, to paralyse these muscles, for it was stated that paralysis of the soft palate never occurs from an uncomplicated lesion of the fifth or seventh nerve. A case was cited in support of this contention, in which the palate on the paralysed side was wholly unaffected. Vulpian's experiments on dogs, and Horsley's and Beevor's on monkeys, have shown that stimulation of the fifth or seventh within the skull does not produce movements of the palate. On the other hand, stimulation of the spinal accessory of the vagus at once induces such movements.

Palate paralysis also is commonly associated with that of the vocal cord on the same side. A case in point was narrated in which paralysis of the left side of the palate and left vocal cord were associated with paralysis of the sensory and motor divisions of the fifth nerve, and later on with paralysis of the sixth and facial of the same side, and the whole area of distribution of the spinal accessory.

On the much-disputed question as to the path pursued by the nerves of taste of the anterior two-thirds of the tongue, facts were adduced supporting the view that they run directly in the lingual division of the fifth, while the posterior third is innervated from the glossopharyngeal. In a case in which Mr. Victor Horsley divided the inferior maxillary nerve just outside the foramen ovale, and therefore above the junction of the chorda tympani, there was complete loss of taste and tactile sensibility in the anterior two-thirds of the tongue. Again, in a case of paralysis of the three divisions of the fifth, there was loss of taste in the anterior two-thirds of the tongue, which, however, returned when the inferior division of the nerve recovered its function, and this in spite of the fact that the superior and middle divisions remained absolutely paralysed. Section of the superior division of the fifth, although producing anæsthesia over the region of the nerve supply, does not interfere with taste.

Referring to the constitution of the chorda tympani, according to Gaskell's views, it was shown to be a continuation of the nerve of Wrisberg, which is a rootlet distinct from the other roots of the facial, and is composed almost entirely of the smallest or visceral nerves.

According to Gaskell there are also some fibres of larger dimensions mixed with these, whose function is uncertain, but it is contended that the bulk of the fibres of the nerve of Wrisberg and those of the geniculate ganglion belong to the efferent nerves of the splanchnic system. Again, the minute size of the chorda tympani renders it unlikely that it should, besides being a secretory nerve to the submaxillary and sublingual glands, also subserve the important duties of being a nerve of taste to the anterior two-thirds of the tongue, and clinical and pathological observations were adduced negating such a view. It is true that facial palsy is often associated with a loss of taste, but a careful investigation of such cases goes to show that there are as many in which taste is unaffected as where it is impaired or lost, while in the later cases

Dr. Ferrier has always found there was evidence pointing to implication of the fifth nerve. The association of lesions of the fifth and seventh nerve is not uncommon, but is easily overlooked. Some interesting cases were then related bearing out the above contentions, in which facial paralysis existed together with loss of taste in the anterior two-thirds of the tongue, and in which it was proved that there was not only impairment of the tactile sense over the same region, but also in other areas supplied by the fifth nerve. From these facts it was argued that in every case in which loss of taste accompanies facial palsy there is probably an involvement of the fifth nerve.

In answer to the question, "Why is the tongue supplied by two distinct nerves," he suggested the following explanation:—The tongue in its somatic functions, movements subserving the requirements of mastication, was supplied by a somatic nerve, the fifth, but in its splanchnic relations to the act of deglutition it was innervated by the splanchnic nerve, the glossopharyngeal.

At the conclusion of Dr. Ferrier's paper the PRESIDENT said he thought the Society must especially thank Dr. Ferrier for his valuable paper. They were not unused to receive contributions from leading men in the profession, and were fully alive to the compliment Dr. Ferrier paid them by attending their meeting. Dr. Ferrier had assisted the advance of the science of physiology more than most men, and the facts which his researches had brought to light had had a most important bearing upon neurology. Dr. Ferrier, he knew, seldom read papers before the societies, and he, therefore, felt the compliment still greater when he (Dr. Ferrier) had acceded to his request to make a communication to the Odontological Society. With regard to the delimitation of the Odontological Society's range of subjects, Mr. Sewill felt that the first function of their Society was to make them better dentists, but to accomplish that they must often go outside their immediate subjects and make odontology a science, so as to allow their society to take place with the other learned societies.

Mr. H. BALDWIN asked Dr. Ferrier whether the quality of the taste given in the anterior two-thirds differed from that given by the posterior third. Experimenting upon himself, Mr. Baldwin had found that while galvanising the anterior portion excited only a pricking sensation, the same stimulus applied to the posterior third induced a sensation of true taste.

Mr. C. S. TOMES felt the thanks of the Society were especially

due to Dr. Ferrier for one point introduced incidentally in his paper. He referred to so-called reflex neuralgias. Cases were numerous in which persons had recorded pain occurring in the teeth during exacerbations of visceral troubles, which had disappeared when the visceral lesion was remedied. Mr. Tomes had always regarded these cases with grave suspicion, and thought those who recorded them were deceived. Viewed, however, in the light which Dr. Ferrier had thrown upon them, these cases were easily to be understood and explained by the intimate relations subsisting between the fifth and other nerves. He knew of a case in which severe prostatic pain, due to an unknown cause, was associated with facial neuralgia, the neuralgia getting more or less severe according as the prostatic trouble increased or lessened. Mr. Tomes thought after what they had heard it would not be right to ascribe such cases to gullibility on the part of those who observed them.

Mr. SEWILL remarked that neuralgia seemed to occur in three classes of persons: (1) in young females who were really suffering from toothache; (2) persons who, although with apparently sound teeth, had yet some hidden cavity or impaction of teeth, which could, with care, be made out and the cause removed; and (3) persons who, past middle life, were afflicted with tic, which seemed to be in no wise associated with peripheral irritation from the teeth.

Mr. R. H. WOODHOUSE remarked that among the able observations Dr. Ferrier had made concerning the regional distribution of the sense of taste, he had not referred to the part which the palate appeared to take in producing it.

Dr. FERRIER, in reply, thanked the Society for its kind reception of his paper. He felt that before a satisfactory reply to Mr. Baldwin's question could be given much fresh knowledge would have to be obtained. It had been assumed that the anterior portion of the tongue was less acutely sensitive to taste, but of this he felt sceptical. The taste function of the palate was also a matter yet to be cleared up.

The PRESIDENT, after the usual votes of thanks, announced that the next meeting would be held November 4th, when Dr. Felix Semon would read a paper upon "Some Points in the Etiology, Diagnosis and Treatment of Empyema of the Antrum."

General Medical Council.**DENTAL BUSINESS.**

Mr. WHEELHOUSE moved that the following report by the Dental Committee on the case of James Dixon Goy be received and entered on the minutes.

The Dental Committee have ascertained the facts relating to the case of James Dixon Goy to be as follows :—

(a) That the name of James Dixon Goy was placed on the Dentists' Register on December 18, 1878, as "In practice before July 22, 1878," and on November 29, 1881, there was added in the Register the qualification of "Licentiate in Dental Surgery, Royal College of Surgeons in Ireland, 1880."

(b) That a letter from the Secretary of the Royal College of Surgeons in Ireland, dated February 8, 1889, addressed to the Registrar of the General Medical Council, states that Mr. Goy, having persistently violated the undertaking given by him to the College that he "would not seek to attract business by advertising or by any other practice considered by the College to be unbecoming," and having broken the ordinance of the Council of his College to that effect, had been removed from his position of a licentiate in dentistry of that College, his diploma thereof withdrawn, and his name erased from the rolls of the College.

Sir W. FOSTER seconded the motion, which was agreed to.

The REGISTRAR stated that a precisely similar case would be found recorded in the last volume of minutes, when a motion was made from the chair. Mr. FARRER, the Solicitor of the Council, and Mr. MUIR MACKENZIE, as judicial assessor, were present, and stated what was to be done, namely, that a motion was to be put from the chair. A similar motion was now in the President's hands.

Before the motion was made strangers were requested to withdraw. In their absence it was moved from the chair and resolved : "That the qualification of Licentiate in Dental Surgery of the Royal College of Surgeons in Ireland, now appended to the name of James Dixon Goy in the Dentists' Register, be erased therefrom."

The Dinner of the Middlesex Hospital Club.

THE above Annual Dinner was held on Thursday, May the 16th, at the Holborn Restaurant, Dr. JOSEPH WALKER occupying the chair. This is, as far as we know, the second occasion on which a practitioner of our speciality has occupied this position,

the other being in 1882, when Mr. Smith Turner was president. Although readers of this Journal always follow the events connected with Middlesex Hospital with a very keen interest, they may be supposed to feel a special satisfaction when a practitioner of their own speciality occupies the chair. The club receives dental licentiates who have been attached to this hospital, and numbers 144 members; there are five candidates waiting to be elected at the next committee meeting. Among these 144 are many names that are familiar as household words in the mouths of all who have studied medicine.

The dinner was naturally a thorough success, and during the evening each guest, by a happy thought of the chairman of the evening, was presented with two photographs, one representing the hospital as it was in 1845, the other the gardens and medical school in 1856; the latter is a specially charming picture.

In the course of the speech of the evening, Dr. WALKER drew attention to the rapid growth of the hospital, and reflected with justifiable pride upon the recent great additions, and spoke of the staff during that period, noting the fact that between 1846 and 1880 there had been only forty changes. In comparing the old curriculum and the old education with the new, the Chairman expressed a doubt whether there might not be a tendency to leave the practical and pursue the theoretical; and pointed out how intimately the two branches were intermingled at the Dental Hospital. Lastly, Dr. Walker urged upon them to take a leaf out of the book of those who were so successful in raising money for churches.

Students' Society, Victoria Dental Hospital, Manchester.

THE Fourth Annual Meeting of the above Society was held on Tuesday evening, May 28th, Mr. WILLIAM HEADRIDGE (Vice-President), in the chair. In his opening remarks he regretted the unavoidable absence of the President (Mr. Leopold Dreschfield), through indisposition.

The minutes of the previous meeting were read and confirmed.

The following gentlemen were admitted as members:—Messrs. Headridge, Hooton, Sibson, and Sykes.

On casual communications being called for, Mr. H. C. SMALE exhibited a lower denture, to which an enormous mass of tartar was adherent. The denture had been in the mouth four years without removal.

Mr. SMITHARD showed a model illustrating an underhung bite resulting from the after-effects of diphtheria, which the patient suffered from when three years old.

Mr. LINNELL showed models of immediate torsions which he had treated satisfactorily.

Mr. BIRKETT exhibited two teeth, one an upper molar showing a marked case of exostosis ; the other an excessively stunted first lower premolar.

The Report of the Council, which was read by the Secretary, showed an appreciable improvement in the work of the Society on the previous session.

The TREASURER (Mr. H. C. Smale), in his report showed a balance to the credit of the Society of £18 5s. 10d.

The following gentlemen were elected as officers for the ensuing session :—

PRESIDENT.—Mr. L. Dreschfield (*re-elected*).

VICE-PRESIDENTS.—Messrs. Headridge, Smale, Smithard, and Campion.

SECRETARY.—Mr. W. Birkett (*re-elected*).

TREASURER.—Mr. D. Headridge.

COUNCILLORS.—Messrs. Carrington, Walker, and Sibson.

The CHAIRMAN announced that Mr. Smithard had presented to the library of the Society a copy of the Medical Directory.

Votes of thanks to the Chairman, Retiring Officers, and to the gentlemen who had brought forward casual communications, brought an interesting meeting to a close.

The Exeter Dental Hospital.

THE annual meeting of the Exeter Dental Hospital was held at the Guildhall on May 21st. The Mayor (W. PETERS, Esq.), presided, and there were also present the Sheriff (W. W. Tremlett, Esq.), the Rev. W. G. Mallett, Mr. W. H. Ellis (President), and Messrs. R. Ley, C. Westron, W. Barnes, G. Franklin, F. Townsend (Hon. Treasurer), J. M. Ackland, E. J. Browne-Mason, S. Mundell, G. Peppin, F. G. Garland, H. B. Mason, C. J. B. Sanders, and G. A. Townsend (Hon. Secretary).

The SECRETARY having read the minutes of the previous meeting, the MAYOR called on Mr. W. H. Ellis to make his annual statement. In doing so, Mr. ELLIS first thanked the Mayor for permitting the meeting to be held in the Guildhall, and then went on to refer in high terms to the medical officers, who gave their

assistance gratuitously. The institution was a charity about which there could be no mistake, since toothache was common to all classes. It might be that toothache and its incidental evils were the consequence of civilisation, for it was a fact that the more nations became civilised the more they suffered from it. They could not, however, believe that savage races were altogether exempt, exhumed skulls often exhibiting decayed teeth. Stopping of teeth was known to the Romans. Formerly, only the wealthy classes could get alleviation from the pain, but now, thanks to such institutions as theirs, the very poorest could get the same benefits from the dentists as the rich. He thought it was an institution worthy of the best support of the community, and especially of those who could afford to assist their poorer citizens. There was a deficit of £46, and he should like to see this cleared off.

Mr. BROWNE-MASON then read the report of the Medical Subcommittee, which showed that during the past year 2,752 patients were treated, as compared with 3,863 in the previous year; and 4,539 operations had been performed. The particulars of the latter were as follows:—Extractions, children under fourteen, 823; adults, 1,813; under nitrous oxide and other anæsthetics, 482—total 3,118. Stoppings with gold, 47; with white foil, 36; with plastic material, 944—total 1,027. Miscellaneous irregularities of the teeth, scaling, &c., 394. The committee attributed the decrease in the number of patients to the change of premises, and considered it would be to the advantage of the institution if more pupils could be obtained. The committee also expressed its regret at the resignation of Mr. Bevan Fox, one of the dental surgeons, and desired to express their satisfaction at the strengthening of the staff by the accession of Mr. James Bankart, M.B.Lond., M.R.C.S.Eng., as consulting surgeon to the Hospital.

Mr. G. TOWNSEND read the report of the Committee of Management, which stated that the special appeal made last year resulted in the receipt of three Life Governors' donations of ten guineas each. The treasurer's account showed an increase on the total income for the year 1888 as compared with 1887 of £37 16s. 8d., and the expenditure an additional £36 17s. 4d., which latter was mainly accounted for by a payment of £35 towards the expenses of removal to and the fitting up of the new premises. There was still a balance of £36 8s. 9d. due on the account, which, together with the deficit of £9 5s. 6d. due on the treasurer's account for the year 1888, made the hospital in debt £45 8s. 9d. The committee closed their report with an expression of thanks to the

whole staff, and recommended the re-election of the President, Mr. W. Hertton Ellis, and the retiring members of the Committee of Management.

The MAYOR then proposed that the reports should be received and adopted. It must be patent to everyone, he said, that the institution was doing a great deal of good among the poor. Toothache was often an excruciating pain, and a dental hospital must be a great relief to those unable to afford a dentist.

The SHERIFF (Mr. W. W. Tremlett), in seconding the report, thought such a hospital was one of the most charitable and useful of institutions. He could sympathise with the sufferers from toothache, and he hoped the hospital would receive increased support.

Mr. W. BARNES, in proposing the re-election of the auditors, said that with regard to the statement that toothache was peculiar to civilised races he thought it was simply a case of the savage having to grin and bear while civilised man had to bear an operation and then grin. He thought savages were as much sufferers from it as civilised nations.

Mr. C. WESTRON seconded the motion, and a vote of thanks having been passed to the Mayor and Sheriff, the proceedings terminated.

OBITUARY.

Mr. Henry Picton, L.D.S.

It is with sincere regret that we have to record the death of Mr. Henry Picton, of Alexandria, Egypt, from consumption, at the early age of twenty-six. He was first apprenticed to Mr. E. C. Waller, of Alexandria, who shortly afterwards died. He then served three and a half years of his time with R. C. Waller Bey, of Cairo, and acted as his assistant for another six months, came to England in 1885, and entered as a student at the Dental Hospital of London, where he made good use of his time and obtained his diploma in 1887, winning an honorary certificate for operating in the same year. Upon leaving the Dental School he made arrangements to commence practice in Alexandria, but an attack of fever soon after he arrived there compelled him to give up the idea for a time. A trip to England last year failed to restore him, and after a lingering illness he passed away at Alexandria on the 19th of last month, esteemed and regretted by all who knew him, and by none more than by his friend and teacher, Waller Bey, by whom the sad news was brought to this country on the 24th of May. We feel sure that the sympathy of the profession will be extended to his sorrowing parents and relatives.

ANNOTATIONS.

A CORRESPONDENT encloses us the following amusing cutting from the *Manchester Citizen* :—

A MANY-GIFTED "TEACHER."—The following advertisement appeared in *Parker's London News* of January 28, 1722 :—"James Williams, parish clerk, sexton, town crier, and bellman, makes and sells all sorts of haber-dashery, groceries, &c., likewise hair and wigs dress'd and out on the shortest notice. N.B.—I keep an evening school, where I teach at reasonable rates, reading, riting, and 'rithmetic, and singing. N.B.—I play the hooboy occasionally if wanted. N.B.—My shop is next, where I bleed, draw teeth, and shoe horses with the greatest scil. N.B.—Children taut to dance, if agreeable at six-pence per week, by me J. Williams, who buy and sell old iron and ceats. Boots and shoes cleaned and mended. N.B.—A hat and pair of stockens to be cudgelled for the best in five, on Shrof Tushday. For particulars encuire within at the Horse-shoe and Bell, near the church, on t'other side of the way. N.B.—I sells good ayle and sometimes cyder. Lodgings for single men. N.B.—I teach jografy, algebray, and them outlandish kind of things. A ball on Wednesdays and Fridays." Quite a walking encyclopædia this J. Williams, for variety of information.

At a meeting of the members of the Museum Committee belonging to the Southern Counties Branch, much regret was expressed at the very feeble response that has been made to the circulars issued to every member of the Association and its branches, and also the special appeals sent out to about one hundred prominent gentlemen in the profession. A resolution was passed recommending the Museum Committee at their next meeting to abandon the idea for this year.

A STRONG desire exists among the local members, that the Museum Committee should be converted into an "Exhibits Committee," to carry out all the sections *except Nos. 2 and 3* named in the circulars. The matter will be brought before the Executive Committee at their next meeting.

ALTHOUGH the Museum itself will be abandoned, the Microscopical Section promises very favourably. Anæsthesia will be well represented ; the leading manufacturers have already declared their willingness to make large exhibits.

GENTLEMEN having any special method of crowning, will greatly assist the work by forwarding specimens at an early date to Walter Harrison, Brighton.

MANUFACTURERS who have not received an invitation to be represented, and desire to do so, will receive full particulars on application to Mr. Harrison.

THE Annual Meeting of the Scottish Branch for the election of office-bearers and transaction of other business, will take place at Newhaven (Firth of Forth), on Friday the 21st, Mr. Andrew Wilson, President, in the chair.

MEMBERS and friends will dine together in the Peacock Hotel at 6.30 p.m. Dr. R. Reid, L.D.S., Chairman; Mr. Bowman Macleod, L.D.S., Croupier.

WE are very pleased to announce that Mr. Robert Moore, the universally respected President of the Irish Branch, and Dr. Theodore Stack, whom all our members will recollect as so ably co-operating in the work of last year's annual meeting, were elected on June 3rd members of the Council of the Royal College of Surgeons in Ireland.

INVITATIONS have been issued by two of our branches for the same day, Saturday, June 22nd, both the Central and Southern Counties Branches having fixed that date for their annual gathering. We need hardly say that we wish them both success.

WE are delighted to observe that the able treasurer of the Midland Branch (Mr. Sidney Wormald) has sufficiently recovered to be able to return to his honorary duties. Mr. Wormald's services to his branch and to the Association at large have made him many friends, who will all receive the news with pleasure.

WE have received the prospectus of the new Dental School established at Guy's Hospital. The teaching staff, at the head of whom stand Mr. Newland-Pedley and Mr. Maggs, consist of thoroughly capable men, not a few of whom have passed distinguished careers as students; the scheme of teaching has evidently been thought out with great care, and presents a very complete appearance. The staff are as follows: *Dental Surgeon*—F. Newland-Pedley, F.R.C.S., L.D.S.E. *Senior Assistant Dental Surgeon*—W. A. Maggs, L.R.C.P., M.R.C.S., L.D.S.E. *Assistant Dental Surgeons*—J. Mansbridge, L.D.S.E.; H. Murray, L.D.S.E.; H. L. Pillin, L.D.S.E.; G. O. Richards, M.R.C.S., L.D.S.E.; R. W. Rouw, L.R.C.P., M.R.C.S., L.D.S.E. *Anæst-*

thetists—F. W. Cock, M.D.; J. F. Silk, M.D. *Lecturers*—(*Dental Surgery*) Mr. Newland-Pedley; (*Dental Anatomy and Physiology*) Mr. Maggs; (*Dental Mechanics*) Mr. Richards; (*Metallurgy*) C. E. Groves, F.R.S; (*Anæsthetics*) T. Bird, M.A. Oxon., M.R.C.S. *Demonstrator* (*Dental Microscopy*) Mr. Mansbridge. *Tutor*—Mr. Rouw. *Dean*—Dr. Perry.

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our Correspondents.

Dental Education.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—I have learnt with great regret from Mr. Morton Smaile that the passage in my previous letter alluding to the Dental Hospital of London is open to quite a different construction to what I intended it to bear, and that it has been taken by him and others to mean that the minimum amount of work required by the rules of that hospital is still further curtailed in favour of men who are working for the conjoint diploma and L.D.S.; and further, that construed in this sense, it implies a reflection on the honour of the Dean and staff of that particular institution. That the words used implied such an accusation as this I never for a moment realised when writing them, and I hope my assurance will be accepted that nothing of the kind was ever intended. What I did mean, and should have been more careful to express accurately, was, that if the attendance of a student working at the same time for both the conjoint diploma and L.D.S. was not so regular, and his record of work therefore not so great as that of a man working for the L.D.S. alone, the extra general work necessitated for the additional qualifications was held a sufficient explanation and justification of that diminished attendance and smaller aggregate of work. It will, however, be perhaps better for me to withdraw so far as I now can the whole passage, which I do with an apology to "the authorities" of the hospital for so carelessly wording it as to let it imply an attack on their honour, and sincere regret for the annoyance which I fear I must have occasioned them by it.

If, however, I may judge from what I have seen myself and heard from others, I cannot but believe it to be a fact—indeed it is almost I think, a matter of notoriety—that men who are working *at the same time* for the triple qualification (M.R.C.S., L.R.C.P., L.D.S.), do as a rule spend less time and do less practical work at the dental hospital than men who are working for the L.D.S. alone, and this I regard as a very strong argument against the proposed change which I discussed in last month's Journal.

I think, too, that it may well be questioned whether more good cannot at present be done by developing and making more systematic the teaching at the dental hospitals than by promoting any material change in the existing curriculum.

Yours faithfully,

Manchester.

GEORGE G. CAMPION.

Suction Plates.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—I regret personally that I did not hear Mr. Hepburn's paper at the Odontological Society, and the discussion thereon. May I remark, however, that I am much interested in the difference of opinion which manifestly existed amongst the members in the treatment of suction plates for edentulous cases.

The whole term "Suction" seems to be an unscientific and unsatisfactory one, and should be abandoned accordingly, in my opinion, for one more in accordance with the theories of capillary attraction and atmospheric pressure which we, at present, believe are the main factors in retaining a plate of this kind.

But, Sir, I have no intention of going over the ground so ably covered by Mr. Hepburn's paper. I only wish to say that as some members seem to like the idea of suction chambers, whilst others object to them because the mucous membrane gradually fills up the chamber, that a very practical and simple way of looking at the whole business seems to be the one which I myself *occasionally* adopt—and intend to adopt more and more—and it is this: I presume, of course, that the air-chamber does give a patient confidence in wearing his first "suction" case—a matter of very great importance. Well, Sir, in a few months, should the case be vulcanite and gold, and holding up well, nothing can be easier than to fill the air-chamber up with vulcanite—by which time the patient can dispense with any such help, and in this way all objections to a sore mouth are removed.

E. M. TOD.

A Protest.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—I am anxious to make a formal protest against the practice of inventing and circulating "sinister rumours" about this institution. Mr. Campion is the second member of the Association during the past year who has done so, and in each case truth has been disregarded and the circulator of the rumour has been at no pains to discover whether the report be true or false; although in both cases the gentlemen who saw fit to repeat such discreditable reports have their names among the past students of this Hospital, and I should have thought would have been ready to defend, rather than attack, the body of teachers to whom they owe so much.

THE DEAN.

The Dental Hospital of London, and London

School of Dental Surgery,

Leicester Square, W.C., May 28th, 1889.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—We, the undersigned, on behalf of the Students of the Dental Hospital of London, beg to state that anyone can inspect the work of the students by obtaining permission from the Dean.

We therefore protest against "sinister rumours" affecting the character of our teachers, when one who cares can seek for himself the truth, rather than be content with sinister rumours. We are—

CHAS. F. RILOT,	}	Demonstrators.
J. F. COLYER,		
T. CONSTANT,	}	House Surgeons.
A. H. SMITH,		
J. P. SMITH,		

*Dental Hospital,
Leicester Square, W.C.*

Dublin Dental Hospital.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—Now that Dublin is starting a Dental Hospital, I think it will be a fitting opportunity for those who took the Irish diploma to show their appreciation by subscribing towards the funds for the new hospital.

I shall be happy to co-operate with any gentlemen for that purpose.

I am, dear sir, yours truly,

June 8th, 1889.

C. MOULDEN BAYFIELD, L.D.S.I.

The Midland Branch.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—Kindly favour me with a little space to express my admiration of the very excellent arrangements made and carried out at our great Annual Meeting at Liverpool.

Our worthy President, Mr. Quinby, deserves our best thanks, which I know he would prefer to share with our hardworking field-marshal, Dr. Waite. I observed, however, just a cloud standing on the otherwise clear horizon, and that was the expressed conviction of many that the day is not far distant when, as a Branch, we shall be compelled to break away from the parent society. That good reasons exist for dissatisfaction none can deny, and especially by those who appreciate Dr. Waite's unrequited services to the whole profession at their proper value; but I would counsel those who are foremost in this agitation to pause before actively advocating such a step, lest it should prove contagious and cause other Branches to do likewise.

Bear in mind that "union is strength"; let us stand well together and exercise patience, and the reforms so much needed will assuredly be carried. I enclose my card.

I am, yours, &c.,

June, 1889.

E. J. L.

Dental Education.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—On reading Mr. Campion's letter in your May number, I was very pleased to see the high position he gave to education as a valuable check to quackery, but I thought it rather inconsistent with such views that he should deprecate the moderately pitched standard of the writer in the *British Medical Journal*. Surely this is rather a feeble way of treating the "only corrective for gross quackery." Again, there is the assumption that increased stringency will restrict the number of men who enter the profession. I believe, sir, that facts point the other way, and that neither increased stringency nor extension of subjects have diminished the number of dental students, while the changes which have been made may claim to have drawn a superior class of men to our ranks. Until Mr. Campion can prove his position I must disregard his reasoning.

The question of the utility of certain kinds of teaching, and of the desirability of extending our medical and surgical knowledge had, I imagined, been continuously insisted upon by our leading men, and so generally admitted by our members, that I am surprised to hear the odd bits of anatomy which are never likely to be useful, trotted out as arguments against an extended education.

Although we can hardly expect a scheme on which all can be agreed still I think that we should look for one which will make the dentist not

only a valuable member of society, but one which will also place him on a footing of equality with his medical *confrères*, and in a position which the scientific world can recognise and respect by virtue of his education. Further than this I am sorry to say I cannot follow Mr. Campion's letter, and I regret that the latter part of it should ever have seen the light. The repeater of a calumny is as culpable as the originator, and I hope and believe that ere this Mr. Campion has deeply regretted that he should have, even by repeating "sinister rumours," aspersed the honesty of men who are entitled to his confidence, and some of them to his gratitude for much of the professional knowledge which he now possesses.

Yours, &c.,

A MEMBER OF THE B.D.A.

APPOINTMENTS.

JAMES LINDSAY, L.D.S., to be a Senior Dental Surgeon to the Edinburgh Dental Hospital, *vice* Charles Matthew, resigned.

JOHN TURNER, L.D.S., to be an Assistant Dental Surgeon to the Edinburgh Dental Hospital, *vice* Mr. Lindsay, promoted.

H. B. EZARD, L.D.S., to be Tutorial Dental Surgeon to the Edinburgh Dental Hospital, *vice* F. Page, resigned.

ROBERT STEWART, M.A., M.B. and C.M., &c., and WILLIAM KEILLER, L.R.C.P. and S.Ed., to be Chloroformists to the Edinburgh Dental Hospital.

C. F. RILOT, L.R.C.P.Lond., M.R.C.S. and L.D.S.Eng., has been appointed Dental Surgeon to the North West London Hospital, *vice* W. H. Maggs, M.R.C.S., L.R.C.P., L.D.S., resigned.

The following are the new appointments on the staff of the Guy's Dental School:—W. A. MAGGS, L.R.C.P., M.R.C.S., L.D.S.E., Senior Assistant Dental Surgeon. J. MANSBRIDGE, L.D.S.E.; H. MURRAY, L.D.S.E.; H. L. PILLIN, L.D.S.E.; G. O. RICHARDS, M.R.C.S., L.D.S.E.; R.W. ROUW, L.R.C.P., M.R.C.S., L.D.S.E., Assistant Dental Surgeons. F. W. COCK, M.D., J. F. SILK, M.D., Anæsthetists. Mr. NEWLAND-PEDLEY, Lecturer on Dental Surgery. Mr. MAGGS, Lecturer on Dental Anatomy and Physiology. Mr. RICHARDS, Lecturer on Dental Mechanics. C. E. GROVES, F.R.S., Lecturer on Metallurgy. Mr. MANSBRIDGE, Demonstrator on Dental Microscopy. Mr. ROUW, Tutor. Dr. PERRY, Dean.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

Subscriptions to the Treasurer, 40, Leicester Square.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE—All communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

No. 7.

JULY 15, 1889.

VOL. X.

The Annual General Meeting.

JUST as the Annual Meeting was coming quickly upon us with all its possibilities of valuable work and social intercourse, which is hardly less valuable, destroying, as it does, so many barriers between us, and uprooting so many foolish prejudices; just as we were to count over the pleasures we anticipated, and the work we hoped to do, a sudden shadow has been thrown across our path; for the hand of death has turned the home of our President-elect into a house of mourning. It is not easy, under any circumstances, to express the sympathy that all must feel for those who mourn the saddest of all bereavements—the loss of a dearly-beloved wife; at the present moment, when the mourner was, in a few brief weeks, to have entertained the Association as its President, we feel that the fewer words the better; what no one can fitly say had better be left unsaid.

The sad and sudden trouble has, as may be easily sup-

posed, threatened to paralyse the arrangements for August, but those who supposed that Mr. Rymer would allow private grief to interfere with public duty miscalculated the spirit of the old reformer. With a sense of public duty that is beyond all praise, the President-elect has chosen once again, as often before, to serve the profession whose battles he was fighting when many of us were in our cradles, and to forget himself. Mr. Rymer served the cause of dental reform in the earliest days of the movement, throughout its uphill struggles, unselfishly and loyally; and so he serves it now, at a time when the strictest disciplinarian might be expected to relax, and crowns forty years of work for dental reform with an act of self-denial which will redouble the sympathy we all of us feel for him in his bereavement.

When we turn to consider the Meeting itself we find many circumstances combining to promise a successful gathering. First of all we look forward to the presence of the veteran leader of our profession, Sir John Tomes. There is scarcely a phase of dental reform or of dental science with which his name is not indissolubly linked, and though of late years his health has forbidden his joining in our annual gatherings, at no time has his guidance been wanting in all our many struggles during the last half-century. He is a member of the Branch, and we shall all welcome his first appearance at an annual meeting of the Association that owes so much of its success to his foresight and ability.

In other respects, too, the meeting of 1889 promises to be interesting and instructive. We shall have, in all probability, a memorable discussion on the all-important topic of anæsthetics; the champions of all the various anæsthetics will be there ready to do friendly battle for their favourite agents, and it is almost certain that considerable light will be thrown upon the value of the various anæs-

thetics in dental surgery. In the region of abstract science we look forward to some valuable debates upon the agency of evolution in producing the dentition with which we are now familiar by modification of pre-existing formulæ, an able and sound expositor of the subject being forthcoming in Mr. Humphrey, of Birmingham, who has for some time attained a foremost place among investigators into this branch of science.

The microscopical department will also be well looked after under the supervision of Mr. Caush, of Brighton, who proposes to teach us something of the newer methods of preparing specimens, and he will be ably seconded by the best microscopists we have in creating an exhibition worthy of the occasion.

The demonstrations, we may safely say, are always good and always command a considerable degree of interest. On this occasion they will not fall short of the previous standard of excellence—in fact, seeing that it is inevitable that with the universal advance of science in every direction, scientific dentistry should advance also, probably the demonstrations of this year will show, as they have hitherto done, an advance upon previous exhibitions, and since practical dentistry is after all our *raison d'être*, the many who are interested in these exhibitions will, as in time past, find ample food for reflection in the mental repast spread before them.

Practically and scientifically, then, the meeting seems assured of success beforehand, and if socially our sympathy for an old friend and fellow-worker cast a tinge of sadness over the gathering, it will be a spontaneous tribute to one who has never considered himself when the interests of the dental profession were at stake, and who does not consider himself now when he might be most liberally excused for doing so.

ASSOCIATION INTELLIGENCE.

Meeting of the Representative Board.

A MEETING of the Representative Board was held at 40, Leicester Square, on Saturday, July 6th, Mr. J. SMITH TURNER in the chair. The following gentlemen were present:—J. Smith Turner, Esq., President, in the chair, Messrs. Ackery, Canton, Coffin, Hutchinson, Matheson, Tomes, West, Weiss, Lloyd-Williams and Morton Smale (Hon. Secretary), of London; Amos Kirby, Bedford; J. H. Redman, Brighton; G. Cunningham, Cambridge; Morgan Hughes, Croydon; J. A. Fothergill, Darlington; J. Fenn Cole, Ipswich; F. H. Balkwill, Plymouth; T. E. King, York. Letters were reported as having been received from Messrs. Campbell, Hunt, McLeod, Breward Neale, Palethorpe, and Rhodes, regretting their inability to attend the meeting.

The HON. SECRETARY reported that Moses Abel, of Newport, Monmouthshire, had been prosecuted by the Association for calling himself a dentist, he not being on the Register, and had been fined £3, £2 of which fine were, at the request of Mr. Melsheimer, devoted to the payment of costs. (A report of the case will be found at another page.)

The TREASURER reported that the balance at the Bank was £696 17s. 6d., that 480 arrear notices had been sent out, to which 182 members only had responded, leaving 298 members still in arrear with their subscriptions.

Mr. CANTON moved the resolution of which he had given notice (see page 325, June Journal), viz.—“That the Vice-Presidents may be elected by the Associates in General Meeting, on the recommendation of the Representative Board.” This having been seconded by the HON. SECRETARY, was carried *nem. con.*, and will, consequently, be moved at the next Annual Meeting in August.

The arrangements for the Annual Meeting up to date were discussed by the Board, and a provisional programme submitted, which will be found on the next page. It was decided that two classes of dinner tickets should be issued; one (including wine) at 21s., and one (including aerated waters) at 15s.

The HON. SECRETARY raised some important questions regarding prosecutions, which were referred to the Business Committee, and inasmuch as the assistance of the hon. secretaries of Branches

was considered necessary by Mr. Smale for the proper consideration of his suggestion, permission was granted for a Special Business Committee to be called to consider the points raised. It was also agreed that the railway fares of Branch Secretaries attending this special meeting should be defrayed by the Association.

A resolution from the Eastern Counties Branch was then received and discussed.

It was decided to accept, subject to the consent of the Annual Meeting, the invitation of the Western Counties Branch to hold the Annual Meeting in 1890 at Clifton.

A vote of thanks to Mr. Bembridge, the Secretary of the Pharmaceutical Society, for services rendered to the Association, was carried unanimously.

A vote of condolence expressive of the deep sympathy felt by the Board with Mr. Lee Rymer, the President-elect, in the severe affliction that had befallen him in the loss of his wife, was unanimously adopted, and the Secretary was requested to convey the feeling of the meeting in a letter to Mr. Lee Rymer.

Mr. MORGAN HUGHES, the Hon. Secretary of Southern Counties Branch, reported that the counties of Berkshire and Wiltshire had been added to the field of the operations of the Southern Counties Branch.

The Annual General Meeting.

THE Annual General Meeting of the Association will be held in the Royal Pavilion, Brighton, on Wednesday, Thursday, Friday, and Saturday, August 21st, 22nd, 23rd and 24th, 1889.

The following will be the order of proceedings:—

Wednesday, August 21st.

8 p.m.—Reception by the President-Elect, S. LEE RYMER, Esq., at the Pavilion, to be followed by a Chamber Concert, consisting of Instrumental and Vocal Items.

Thursday, August 22nd.

9 a.m.—Meeting of the Representative Board.

10.30 a.m.—The Annual Meeting for business (open to Members only). *At the termination of the Association business the Meeting will be open to Visitors.* Mr. DANIEL CORBETT will deliver his valedictory address.

Mr. S. LEE RYMER will take the Chair and deliver an Address.

LIST OF PAPERS PROMISED.

The following important Papers will be read :—

“On Ether,” by Dr. CRUISE, of Dublin.

“On Chloroform,” by BOWMAN MACLEOD, L.D.S., Scotland.

“On Nitrous Oxide Gas,” by Dr. DUDLEY BUXTON, London.

“On Mixtures,” by Dr. FREDERICK HEWETT, London.

It is hoped an interesting and valuable discussion will follow.

“On the Comparison of the Teeth of Tertiary Mammals with those of the Present Day,” by JOHN HUMPHREYS, L.D.S.I.

“On Vulcanite Work,” by J. H. REINHARDT, L.D.S.

“On Implantation,” second paper, by GEORGE CUNNINGHAM, M.A.Cantab., L.D.S.Eng., D.M.D.Harvard.

1 p.m.—Luncheon in the Banqueting Room.

2.30 p.m.—Reading and Discussion of Papers.

5 p.m.—Afternoon Tea will be served in the Banqueting Room for Members and Ladies accompanying them. Promenade in grounds.

8 p.m.—Garden Party and Soirée. Military Band in grounds, which will be illuminated. Concert, &c. in rooms.

Friday, August 23rd.

9 a.m.—Meeting of Benevolent Fund.

10 a.m.—Reading and Discussion of Papers resumed.

1 p.m.—Luncheon in the Banqueting Room.

2.30 p.m.—Business resumed.

5 p.m.—Afternoon Tea.

7 p.m.—Annual Dinner at the Pavilion.

Dinner Tickets, 21/-, without wine 15/-, to be obtained of Mr. J. H. Redman, Old Steine, Brighton.

Saturday, August 24th.

9 a.m.—Demonstrations, Mechanical and Operative, at the Pavilion.

Mr. Hayman, L.D.S., will show a case of artificial restoration of portion of face.

Picnic and Luncheon.

Further particulars will be given later on.

SPECIAL NOTICES.

No reduction can be made in railway fares.

All Members attending the Meeting are requested to sign their names in the book provided for that purpose, at the entrance to the Pavilion.

Subscribers to the Benevolent Fund and others are requested to attend the Annual Meeting of the Benevolent Fund.

MORTON SMALE, *Hon. Sec.*

THE FOLLOWING LIST OF HOTELS THAT CAN BE RECOMMENDED, WILL, IT IS HOPED, MEET THE REQUIREMENTS OF ALL MEMBERS:—

Private Apartments can be obtained if desired.

HOTELS.—“Grand Hotel.” Members will be received on the same terms as those accorded to the Members of the British Medical Association when they visited Brighton. Full board, 10s. 6d. per day; partial, 7s. 6d. “Bedford Hotel,” bed, breakfast, and attendance, 8s. 6d.; “Clarence Hotel,” bed, breakfast, and attendance, 6s. 6d.; “Emery’s Temperance Hotel,” bed, breakfast, and attendance, 4s. 6d.; “Gloucester Hotel,” full board, 9s. per day; “Harrison’s Hotel,” bed, breakfast, and attendance, 6s. 6d.; “Livingstone Hotel” (Temperance), 14, Old Steine, bed, breakfast, and attendance, 4s. 9d.; “New Ship Hotel,” bed, breakfast, and attendance from 6s.; “Old Ship Hotel,” bed, breakfast, and attendance, from 7s.; “Royal Albion Hotel,” full board, 12s. per day.

It is intended that the “Grand Hotel” shall be made, as far as possible, the “Head Quarters” of the Association, and that Hotel will place at the disposal of the Members a common room for the purposes of social intercourse, &c.

Midland Counties Branch.

(Continued from page 351).

DISCUSSION ON MR. SIMMS PAPER. See p. 415 for Paper.

MR. BRUNTON remarked that jewellers could put a beautiful enamel on 18-carat gold jewellery, and asked what was to prevent dentists from doing something of that sort.

A Member replied that the enamelling jewellers used was fusible at a very low temperature, and was utterly unfit for dental purposes.

Another Member asked Mr. Simms whether he used any other means to prevent the gum from cracking in adding vulcanite to it.

MR. SIMMS said he did not think there was much fear of cracking with ordinary care, if the denture were constructed in the manner shown in the specimens. Vulcanite contracted after it came out of the vulcaniser, and the continuous gum work should be so rigid as to resist, not only any pressure during the packing process, but the contraction of the vulcanite which took place after the denture was finished.

MR. MATTHEWS suggested that the edging of the teeth Mr. Simms had spoken of was produced by the extreme heat of the furnace fusing the plaster in which the piece was imbedded, and the plaster coming in actual contact with the teeth. It could be always prevented, he believed, by coating the teeth with a solution of shellac and alcohol. When heated up, the shellac melted and left a very small space between the teeth, so that the edging

did not take place. When he was in America lately, he made inquiry with regard to the Allen gum body enamel, and he was informed by one of the members of Messrs. White & Co., that it had not been made by John Allen, who was becoming a very old gentleman, but had been entrusted for some time to some of the employés of Messrs. White, and they had manufactured a very indifferent enamel. Hence the difficulty they had in England some years ago, when experimenting with this continuous gum. The failures were largely due to the defect in the materials supplied to them, and he found that at the same time the American workers in continuous gum were experiencing the same trouble; that was to say, after all their trouble, they found minute cracks all over their continuous gum piece, which was highly unsatisfactory. He had had some little experience since he had been away with some gum bodies manufactured with great care by Dr. Steel, of Philadelphia, which he could recommend very strongly to any members going to commence this class of work. It rarely required more than two bakings of the gum body and one for the enamel, and came out perfectly satisfactory. It did not require any slow cooling at all. They could remove it, take it out quite hot and examine it to see if it was perfect, and if there were any little flaw, they could, then and there, without allowing it to cool, put on a little butter and put it back into the mould. With regard to the platinum facing for vulcanite work, some years ago he was experimenting in this, and he adopted a method which was very satisfactory. He first of all waxed up the teeth in the ordinary fashion, as he would for a vulcanite plate. He then pared away the wax representing gum, until he had brought it down to where he would like the platinum plate to go; he then removed all the teeth, leaving the impression on the wax. He then made a case of that, and struck up a plate, bringing it up just on a level with the pins, and he left some long pieces of platinum that could be bent over, so that it was all in one piece. He then simply had to put the teeth back, bend the pins over and solder them. He was not able to put it into the mouth, in consequence of a flaw which was the result of a defect in the Allan's gum enamel supplied to him, which was at that time the only gum body in the market.

The PRESIDENT said he had had some experience in this sort of work. Thirty years ago he did a good deal of it, and on the occasion of the Paris Exhibition, in 1859 or 1860, he was asked

by the great rubber manufacturers of Manchester, Messrs. Macintosh & Co., to prepare some specimens for them showing the adaptation of rubber to dental purposes. Among others, he prepared two or three specimens of continuous gum work and india rubber combined, and allowed them to send them to Paris. The specimen he showed them was one of these. It had been handed about a great deal since then, but had never been in any body's mouth. It was not made for a practical piece. It was made on a mould he selected from his own collection, and was mounted without any reference to a bite. Why he spoke of it never having been in the mouth was because they would see it was a great deal cracked—not simply from the handing of it about. The vulcanite plate was a very light one and very springy, but, otherwise than that, the piece spoke for itself. Of course, if it had been badly cracked at the time, he should scarcely have wanted to send it to Paris. It was very badly cracked now.

Mr. CRAPPER (Hanley) said that, having had a good deal of practical experience in continuous gum work, he thought it was a class of work to which it would well repay any one to pay assiduous attention. Of course, he went back before the introduction of the gas furnace, and so forth, by Mr. Verrier. No doubt a good deal of praise was due to that gentleman for what he had done; nevertheless, having tried Verrier's, and having tried different experiments, in his experience he had seen nothing to equal the coke furnace, used something after the manner of Tee's furnace, for producing good work. He had seen many cases which had given satisfaction. He had worn a continuous gum upper for many years. He was wearing one at the present time, and, from the weight of it, they would think it would be impossible for it to be comfortable, but he might say that he did not feel the slightest inconvenience from it. If they had a perfect fit with the continuous gum work, and the plate fitted properly to the mouth, they might have a piece that would fit as firmly as was possible for it to do, in fact, just as they could have two pieces of steel and glass so finely cut that they would be kept together by atmospheric pressure. The object was to get a perfect fit, and, when that was done, there was no doubt that continuous gum work, although heavy, might be made exceedingly comfortable. He would not like, himself, to use any other kind; and he was still much in favour of the coke furnace after the manner of Tee's. It required a good fire, and turned out the strongest and best work.

Mr. SIMMS said, it had been a pleasure to him to listen to the remarks of the various gentlemen who had spoken with regard to this matter. Continuous gum work, he thought, ought to have benefited from their observations. With regard to the possibility of obtaining a colour that would melt at a lower temperature, and possible to fuse upon gold, he still believed that it was impossible, because the chief ingredient—the necessary ingredient for the gum colour—was gold itself, and, that being so, it would be very difficult, it would be impossible, to make gold fuse upon gold, especially gold which melted at a lower temperature than pure gold. With regard to the observation of Mr. Matthews, that the cause of the edging observed on teeth was contact with the plaster of Paris, he should like to point out that all the specimens he submitted, some of which showed this edging, had been entirely free from plaster of Paris, and one of them particularly, which was edged very badly, had been in no sort of contact, either in the soldering process or subsequently, with plaster of Paris. He therefore felt that that was scarcely an explanation of the trouble they experienced.

Dr. LLEWELLYN MORGAN (Liverpool), next read a paper on "Anæsthetics in Dentistry," which will be found at page 422.

The PRESIDENT said it was very kind of Dr. Morgan, who was not in their profession, he believed, to come before them and read so interesting a paper. He should be glad to hear any brief remarks on the subject.

Dr. MORGAN said, he should like to hear the practical remarks of any dentist on his experience of cocaine. He thought it was a subject which ought to be threshed out by the dental profession, for he was afraid that dentists hardly recognized what a dangerous drug cocaine was.

Mr. JONES said, he had for the last three years used cocaine very largely. He knew there had been a great difference of opinion respecting the use of it. He generally used about a quarter of a grain, and increased up to half a grain. He dissolved half a grain in thirty minims of water. He knew that his method was rather different from the method used by many, but he must say that his successes had been greater, he thought, than those of most people with the use of cocaine, and he had had fewer cases which had caused him any anxiety, which arose from his carefully using it, watching its action very closely. He had only had one case during the last few years that had caused him any

anxiety whatsoever, and during that time he had injected cocaine perhaps three or four thousand times. The one case in which he had any anxiety occurred in the early part of 1886. It was stated that one grain was a dose, and he used a grain, with the result that palpitation was excited and the young lady got hysterical. Those symptoms lasted about an hour. They took her boots off, got her warm and sponged her chest, and she came round in about an hour's time, after the administration of strong coffee, sal volatile, and one or two other things. Since then, he had been more careful, and had never given more than half a grain, in many cases only a quarter, and sometimes one sixth of a grain. He had taken out six teeth with half a grain, the operation being perfectly painless. It depended on the quantity, and the quantity of water in which it was dissolved. It was more successful in the lower jaw than in the upper jaw. The time it took varied from two minutes to about seven; he could not give any rule or law. Every case must be watched very carefully. There were no two cases alike. He had noticed that a quarter of a grain had had more effect in one case than a grain in another. He had given a grain and a half and two grains without any bad effect, but those were exceptional cases. One gentleman would take two grains and it would have no effect upon him, and a quarter of a grain would make another quite hilarious. This one said the feeling was charming to him, and he had not the slightest pain in the taking out of a canine. He said he felt drunk, but no worse. It made him feel as if he had had a glass of whiskey, but apart from that hilarity it had no bad effect. It had no constitutionally bad effect.

Mr. PHILLIPS said many cases were very unsuitable for cocaine. He saw one instance in which, with the injection of six drops, very unpleasant symptoms came on and lasted for three hours. Amongst local anæsthetics, Dr. Morgan did not mention ether spray, which was in some cases exceedingly practicable and very suitable. It rendered the operation perfectly painless, and there was no risk at all. Of course, it must not be used by gaslight.

Mr. BRUNTON said he had been delighted with the doctor's thoroughly practical paper. When they got a paper from a medical friend it was usually more theoretical than practical. He would like to say a few words about the position of the patient during the administration of both chloroform and ether. He would strongly object to having a patient put under ether in an

upright position in a chair. The little trouble that was involved in putting the patient in a prone position was nothing to compare with the safety ensured. Mr. Pearsall was bold enough to state at the York meeting that the proper way to administer ether was in the upright position—that that was the practice in Ireland, and that it was the proper way. Besides having the patient in a prone position, lying level, he (Mr. Brunton) had found great benefit from practising what was known as the Howard method. The patient's head was put lower than the body, stretching the muscles of the neck, and in that position the operator could operate with the greatest amount of freedom, without the fear of broken instruments or broken teeth, or whole teeth, getting into the throat or wind pipe. The first condition of a patient under ether, he fancied, was not entirely an anæsthetic condition; he thought it was partly asphyxiation. The doctor referred to watching the pulse when a patient was under chloroform. He had noticed that most administrators of chloroform paid no attention to the pulse whatever, but watched the breathing very closely. Coming to local anæsthetics, he would just like to state that he put nine grains of a 10 per cent. solution of cocaine into one patient at one sitting without observing any material effect produced at all. She was an alcoholic patient he found out, and he accounted for it in that way—one acting against the other. On the other hand, very serious effects were produced by very small quantities.

Mr. LADMORE said he thought he first used cocaine at Mr. Brunton's suggestion about three years ago, and he could quite endorse from his experience all Mr. Jones had said. He rarely took a tooth out without the use of cocaine; he used it in every case. He had had patients very badly upset. Latterly, he had been using never more than half a grain, and he was quite sure that if the dose were kept well within half a grain, not exceeding that quantity for each dose, no very serious symptoms could follow. This was the result of his experience. He had found that that dose, provided it produced no unpleasant effect, could be repeated in about ten minutes. There did not seem to be an accumulative effect. He had gone on to a grain and a-half or two grains, but he did not usually. If there was any unpleasant effect, it was from the first injection, not from the others. He thought those who condemned the use of cocaine so strongly did so without having given it a fair trial.

Mr. JEFFERSON fully endorsed all Mr. Ladmore had said about cocaine. He generally found that, when he had extracted a tooth under its influence, the patient asked him to go on and extract a few more ; he seemed to find it quite a pleasant operation. He (Mr. Jefferson) had experienced it in his own person. The only pain was from the pricking of the needle, and that was very slight. The quantity of the drug he had generally used was one-third of a grain. He measured off two grains of cocaine to a twenty minim tube, and he thought that was quite sufficient in the majority of cases.

Mr. MANSELL said his experience of cocaine had been totally different from that of the previous speakers. He used it rather extensively some twelve months ago. He had a number of very successful cases, but he had several unsuccessful ones, with rather alarming symptoms, which he attributed to the use of too large a quantity. He gave up its use for a time, but he was afterwards recommended to use a quarter of a grain, and in the next case that presented itself he tried it. He mixed a quarter of a grain in ten minims of water to operate on a man twenty-two or twenty-three years of age, in very good health and a strong-looking fellow. He got him in the chair and took up the solution of cocaine, and injected one-half, or probably four or five minims only. Almost immediately the most alarming symptoms ensued. The patient turned livid, the pupil dilated, and he struggled violently, and ultimately became unconscious. He remained in this state, greatly to their alarm, for five minutes or more. He then broke out into a profuse cold perspiration. They stripped him and used great friction, and then put him to bed, where, he was sorry to say, they had to keep him for about two days ; so that from that time he had discarded the use of cocaine altogether, and did not feel inclined to try it again. There was nothing in the man's condition to lead him to suppose that any difficulty would occur. He fully agreed with Dr. Morgan that it was a dangerous drug, and they had no line to go upon in its administration.

Scottish Branch.

THE Annual Meeting of the Scottish Branch was held in the large room of the Peacock Hotel, Newhaven (Firth of Forth), on the afternoon of Friday, June 21st, ANDREW WILSON, L.D.S., in the chair. There were present: Dr. Leslie, Cincinnati; Mr.

Booth-Pearsall, Dublin ; Drs. Smith, Stewart, Reid, and Keillor ; and Messrs. Durward, Wilson, MacGregor, J. S. Amoores, R. Amoores, Biggs, Watson, Matthew, Forrester, Price, Cormack, Mackintosh, Walker, Campbell, Macleod, &c. The following gentlemen were elected office bearers for 1889-90 : President, Dr. Robert Reid ; Vice-President, Dr. W. H. Williamson ; Treasurer, Andrew Wilson ; Hon. Secretary, W. Bowman Macleod ; Council, Dr. Smith, Messrs. G. W. Watson, M. MacGregor, C. Matthew, J. A. Biggs, Rees Price, P. Crombie, Walter Campbell and P. Walker.

At the conclusion of the business meeting the members adjourned to the dining hall, where they partook of one of those *récherché* fish dinners for which the port of Newhaven is renowned. The company, presided over by Dr. Robert Reid, the oldest practising dentist in Scotland (possibly in Britain), spent a most harmonious evening, their appetites sharpened by the balmy breath of ozone-laden breezes, which came in at the open windows from the mouth of the Firth of Forth, and their digestions quickened by the hearty laughter following the *bon mot*, the repartee, or the pawky introduction of a spice of Scottish wit and humour, to say nothing of an occasional application internally of Burgundy or Glenlivet.

After the usual loyal toasts by the Chairman, Dr. SMITH proposed "Kindred Societies," coupling therewith the names of Dr. Leslie, of Cinucinnati, and Mr. Booth-Pearsall, of Dublin. In reply, Dr. LESLIE—who almost approached in age the worthy chairman—revealed himself as an old Edinburgh boy, who, on many a morning, had tramped down from Auld Reekie, and fished for "podlies" from the end of Newhaven Pier. Since then his later youth and adult life had been spent in America, and it had always been his endeavour to march with the progressive party in the profession. It had been his good fortune to be identified with the establishment of the first dental society and the first dental college in America, and now in his later years, on revisiting his native city, he had been at their Odonto-Chirurgical Annual Meeting, he had been through their Dental Hospital, and he had had a peep into some of their workshops and surgeries, and it gave him intense pleasure to find that the old country was well to the front—much nearer the front than the average American had any notion of, or he himself had any notion of, until he came and saw and was convinced ; and now on the eve of his return to the land of

his adoption, here he was in the midst of old land-marks, surrounded by jovial, high-toned, cultured professional brethren, sharing with others their hospitality and mirth. He thanked Dr. Smith for his kindly expressions towards the American profession, and most heartily reciprocated the good wishes.

Mr. PEARSALL replied on behalf of the Irish Branch.

After dinner a silver collection on behalf of the Dental Benevolent Fund was made.

Southern Counties Branch.

THE Annual Meeting of the above branch was held at Tunbridge Wells on Saturday, June 22. The Council met at 11 o'clock at the Calverly Hotel, and shortly after 12 o'clock the members proceeded to Penshurst, about eight miles off, in coaches generously provided by the incoming President, Mr. W. B. Bacon, who also provided an excellent lunch for his guests at the Leicester Arms prior to visiting Penshurst Place, the ancient and beautiful home of the Sydney family. Special permission had been kindly granted to the party to view the private as well as the public apartments, and this privilege was so fully appreciated that in spite of the frequent calls of "time" by the President, members lingered so long over the various attractions of the place that the return journey was an hour late, and the time for the subsequent general meeting was consequently seriously curtailed.

The best thanks of the Association are due to Mr. Edwardes, of the *Kent and Sussex Courier*, who has not only furnished our Journal with the verbatim report of the speeches at the meeting and dinner, but also devoted considerable space in his valuable paper to an account of the proceedings. Thanks are also due to Mr. Frank Bell, the hon. local secretary, who, in addition to his other valuable services, kindly provided the music at the Dinner.

GENERAL MEETING.

Mr. J. CORNELIUS-WHEELER, the president, occupied the chair, and amongst those present were Mr. W. Beadell Bacon (the president-elect), Messrs. Dennant, Welch, Redman, John Wood, Caush, Harrison, and Elliott (Brighton), Messrs. D. W. Amooore, G.

Henry, Dickenson, and Maxwell (Hastings), Barton and Foran (Eastbourne), Alderman Rymer, B. A. Williams, and Morgan Hughes (Croydon), Clarke and Richards (Richmond), Van der Pant (Kingston-on-Thames), Saunders (Ramsgate), Cooksey (Worthing), C. W. Amooore (Dover), Gill (Norwood), Gabell (Redhill), Cunningham (Cambridge), M. Henry (Folkestone), Colyer (Ryde, Isle of Wight), Walker, Hoole, Morton Smale, Underwood, Reinhardt, Canton, and Spokes (London), Bell, Trollope, and Pearse (Tunbridge Wells).

The SECRETARY (Mr. Morgan Hughes) read the minutes, which were signed, and also the annual report, which spoke of considerable progress during the year, fourteen new Members having been added to the Branch, which now numbered seventy-four.

Mr. REDMAN then read the balance sheet. He said he was pleased to state the arrears of last year had been paid. He considered their financial position a very satisfactory one, as they had £14 2s. 4d. in hand. This statement did not at all touch upon the guarantee fund, which was altogether a separate matter. He had been talking the matter over with the Council, and he felt that this year they must hold their hands for the present, and not give any donation to the Benevolent Fund until after the meeting in August, as they might incur expenses beyond what the guarantee fund would provide.

The report and balance sheet having been adopted,

The PRESIDENT said his next duty was to thank the Members for the kindness and consideration shewn him during his year of office. Time was most pressing, and therefore he should not detain them with any remarks. He would simply introduce them formally to Mr. Bacon, the president-elect, who would, he was sure, make a most worthy successor in the presidential chair.

Mr. Beadell Bacon then amid much applause took possession of the presidential chair, upon which

Mr. Alderman RYMER proposed, and Mr. DENNANT seconded, a vote of thanks to the retiring President, which was carried by acclamation.

The Ex-PRESIDENT having responded, the PRESIDENT (Mr. Bacon), delivered his presidential address as follows:—

GENTLEMEN,—I am deeply sensible of the honour you have conferred upon me in electing me your President, and I sincerely hope I shall be able to discharge the duties of the office to the satisfaction of the Members. My predecessors have addressed

you upon matters of great importance to our profession, and I am sure you will agree with me that the more frequently we meet and discuss matters respecting the various branches of our profession, the better it will be for our Association and for the public. Although sometimes it is very difficult to leave home and attend meetings at a distance, I always feel I have been fully repaid and that my time has not been wasted, I therefore trust those who have not been regular attendants and who can do so, will try to be present during my year. It must be as gratifying to you as it is to me, to see the rapid strides which dentistry has made during the last twenty years. I have been in practice in this town for that period and have seen great changes. The time is within the recollection of many here, when we had to do all our work without the great assistance of the rubber dam and burring engine, and when the nitrous oxide gas was in its infancy. How should we feel now without those aids? People are now aware that those who advertise are no longer considered qualified practitioners, and they are looked upon as men who are simply disgracing an honourable profession. I consider that our Association has three objects—firstly, the elevation of our profession; secondly, to do all in our power to prevent the public being imposed upon by the unprincipled actions of the men to whom I have referred; and thirdly, to promote mutual intercourse and friendship for the benefit and instruction of each other. I hope, therefore, that during my year of office a great many may be induced to become Members, that we shall have a much larger attendance at our meetings, and that both profit and pleasure may be derived from them. I am pleased to inform you that two counties, namely Wiltshire and Berkshire, have recently desired to join this Branch, and it has been decided to-day that for the future they shall form a part of the Southern Counties Branch of the British Dental Association. You will agree with me this is a valuable addition, as it will give strength to the objects we have in view. I consider it my duty to call your attention to the fact that in August of this year we are to be honoured by a visit from the parent Association at Brighton, and I feel sure you will join with me in giving them a hearty welcome. You will remember the splendid reception given to us in Dublin last year, and although I am certain we shall not be able to rival all that was done on that occasion, yet the hospitality of the South of England is well known. I feel sure, therefore, I may rely upon you to do your best, and as we have

not the advantages of the colleges our friends at Dublin had, we shall have to put forth greater efforts in other directions to meet those deficiencies. The President, Mr. Rymer, is a gentleman who is very highly respected, and whose past services in the dental cause are fully appreciated ; we may, therefore, rest assured that none of the dignity of the Association will be lost in his hands, and we must further remember that in him, our first president, we are honoured by the parent Association electing him as president. Mr. Rymer proposes to hold a reception on Wednesday evening, followed by a chamber concert. On Thursday evening there will be a *soirée*, on Friday our annual dinner, and on Saturday an excursion. I have only mentioned those things that will be provided for your recreation ; the business part will be officially communicated to you at a later period. I have alluded to the desirability of every respectable dentist joining our Association ; the necessity for this is shewn by the smallness of our funds, which prevents us doing much good work, that as a dental association it is our duty to do. Some members have complained that we have not taken action against certain persons for infringing the Dentists Act ; we have only been prevented from so doing by the want of funds, and in no case is the saying truer that "unity is strength" than in our profession ; for in every case where we have prosecuted we have been successful. To be engaged in the relief of pain is a noble occupation. No one relieves more acute suffering than we do, although during very many of the operations we are obliged to give much discomfort, if not absolute pain, yet the results are great. It is not the fee we afterwards receive that is our only reward, but we get that which we all value most highly—the gratitude of our patients. It is not now my intention to introduce any debateable subject. We are agreed that our branch of the medical profession, like the surgical, is still daily gaining knowledge, and no branch is open to more improvement ; for we have cases coming before us continually requiring fresh thought and care, not only in the operating room, but in the workroom, and there is no occupation where more minute mechanical skill is required. I sincerely hope that all who really wish to join our ranks will think seriously of what they are undertaking, that they will be prepared to serve the full time in the workroom required by the curriculum, and treat it of equal importance with the surgical part. I am afraid some do not consider it of such vital importance, but in the workroom a pupil is taught to use his fingers, and unless

one acquires that knowledge he can never do good work in the mouth. Dental surgery has now advanced in utility and in public estimation to such an extent that it makes it incumbent upon all those who wish to join our profession to do their utmost to attain perfection. There is a vast amount of gratuitous attendance to the poor, both in medical and surgical cases, and I am glad to know that nearly every hospital has its dental surgeon on the staff, for we, like the other portion of the medical profession, are always willing to assist in relieving the poor, but knowledge, which has taken years to acquire through a costly training by the passing of the Dentists Act, and has become more expensive in attainment even than the degree of surgeon, should meet with its just reward. The confinement in the practice of dentistry, and the care and responsibility of the work is very trying, nor is it conducive to the pleasures of life, but requires on behalf of those engaged a provision for a premature old age. This Branch has been formed four years, and I am pleased to say we have an increase in the number of members, consequently a corresponding increase in power and influence. I sincerely hope that we may continue to prosper, closing up our ranks, and forming a bond of friendship which will tend to promote good feeling in the profession, and prevent any misunderstanding that might otherwise arise. It is pleasing to me to welcome you to Tunbridge Wells. I take it as a great compliment that you should have selected the town in which I have so long practised to hold the Annual Meeting. I trust that the arrangements which have been made have proved satisfactory, for my desire, as your President, is to do all in my power to further the interests of the Association, and to elevate the grand profession to which we all belong.

Mr. REDMAN then read the report of the Executive Committee, which had, he said, been very energetic and which he hoped would result in the holding of a most successful meeting at Brighton very shortly. The Museum Committee had not met with such encouragement as they should like, to warrant them in carrying out a museum on the lines of the one at Dublin, which was a matter of much regret, so they had arranged it should be called the Exhibit Committee, which would take charge of whatever interesting items might be entrusted to their care. They felt it would be better to do that than undertake anything which would probably end in failure. With regard to the forthcoming meeting at Brighton, a sub-committee had been formed entirely of Brighton

Members, who would arrange for the dinner, entertainment, &c. On Wednesday, they would hold a reception, if possible in the Pavilion, after which a chamber concert would be given. On Thursday there would be the usual business meeting of the Association, followed by the reading and discussion of papers, and a garden party. Friday would be given up to business, the Annual Dinner to take place in the evening. On Saturday morning there would be a series of demonstrations, and if permissible a picnic at some suitable place. The secretary of the Demonstration Committee would be glad to have the names of any gentlemen who were anxious to give demonstrations, at an early date, as they were anxious to complete the arrangements as soon as possible. The Hon. Sec. would also be very glad of any gentlemen who would give in their names as supporters of the guarantee fund, for it was very necessary they should have as much in hand as possible. Even small amounts would be thankfully accepted, for it was only by united efforts they would be able to get what they wanted. He might mention that from now onwards they would be holding committee meetings regularly every Tuesday evening, at 97, Buckingham Road, Brighton, which would save the trouble and expense of sending out notices unless some special business should be brought forward.

Mr. Alderman RYMER said he had been requested to move a resolution which referred to an alteration of the bye-laws of the Branch: it was simply that they should include within the area the counties of Bucks and Wilts. Geographically it seemed as though they should come within the Southern Counties Branch. At the present time they were not included in any branch, and the Council having given the matter a great deal of consideration, had thought it very desirable to recommend their being added to the Southern Counties Branch. They would add to the strength of the Branch and benefit the general work of the Association. Mr. Petty, of Reading, a gentleman well-known in the profession, and Mr. Farebrother, of Salisbury, had been consulted in the matter, and they cordially approved of the suggestion, and would do all they could for their respective counties to promote the interests of the Branch.

Mr. CORNELIUS-WHEELER said he attended a meeting held at Leicester Square some time ago when this matter was thoroughly discussed, and it was felt it would be to the interest of the Branch that these two counties should be included. Under these circum-

stances he should be very pleased to second the resolution, which was put to the meeting and carried unanimously.

The SECRETARY then read the list of members on the Council, and said Mr. D. W. Amooore, Mr. M. L. Bell, and Mr. C. H. Bromley retired by rotation, but were eligible for re-election. The Council had recommended Mr. Bacon for President and Mr. F. J. Van der Pant for president-elect.

Mr. REDMAN had great pleasure in proposing the election of Mr. Van der Pant as president-elect for the year, for having known him for a great many years he was sure he would carry out the duties to the satisfaction of the Branch.

The PRESIDENT seconded, and the resolution was carried unanimously, Mr. VAN DER PANT thanking the members for the honour conferred upon him, and assuring them it would be his earnest endeavour to carry out the duties to their satisfaction.

Mr. DENNANT did not consider the resolution complete until they had passed another, and that was the place of meeting. He proposed it should be Kingston-on-Thames. It should be their study to cover as wide an area as possible.

Mr. REDMAN seconded, and the resolution was carried unanimously.

Mr. DENNANT then moved that the Vice-President should be the retiring President, Mr. Cornelius-Wheeler, the hon. treasurer Mr. T. H. Redman, and the hon. secretary Mr. Morgan Hughes, thanking them for their past services.

Mr. Alderman RYMER seconded, and the resolution was carried unanimously.

Mr. GILL proposed the election of Messrs. Van der Pant, G. Henry, J. E. Welch, J. H. Whatford, D. W. Amooore, John Dennant, S. Lee Rymer, Walter Harrison, E. T. Cooksey, and J. H. Reinhardt as the Council.

Mr. WELCH seconded.

The PRESIDENT asked whether there were any other names to propose.

Mr. CAUSH asked whether any representative of the two new counties of Bucks and Wilts had been mentioned.

The PRESIDENT explained that their bye-laws would enable them to add representatives from those counties.

The HON. SECRETARY said that they had only the minimum number of nine nominated, and that there was no reason why other names should not be added to the list now before the meeting for election.

Mr. DENNANT thought they were rather hurrying this question, which was one that should not be hurried. Unfortunately they were late in commencing their business, and they seemed inclined to hurry through everything. It should be remembered that each Member was entitled to propose candidates for the Council, and there would be a ballot. If the names submitted were considered satisfactory they could be elected *en bloc*, and the time of the meeting would be saved.

Dr. WALKER said he felt very strongly on this point, and that they ought to give more time to the election of the Council. Every Member should have an opportunity of expressing his opinion. He considered this a most vital point, and due deliberation should be given to it. All felt they ought to have a voice in the election of officers, and he had heard the matter frequently referred to by Members.

The PRESIDENT quite concurred with Dr. Walker, and invited the meeting to propose other candidates as members of the Council. As no one, however, made a proposition, the resolution before the meeting was carried unanimously.

Mr. HARRISON then read his paper on Dental Education, which, together with the interesting discussion which followed it, will appear in our next issue.

(*To be continued.*)

Western Counties Branch.

THE Annual Meeting will be held at the Park Hall, Cardiff, on Friday, 26th July, 1889.

THE ORDER OF PROCEEDINGS WILL BE AS FOLLOWS :—

9.30 a.m.—Meeting of Council at the Park Hotel.

10.30 a.m.—General Meeting of Members, for the transaction of business ; President's Address ; Reading and Discussion of Papers.

1.45 p.m.—Adjournment for Luncheon.

3 p.m.—Business of Meeting resumed.

7 p.m.—Dinner at the Park Hotel. Tickets 6s. 6d. Members intending to be present are requested to make early application to the Hon. Secretary.

An excursion is arranged for Saturday, July 27th, to proceed to Chepstow, from thence in brakes to Tintern, *viâ* the Wyndcliff. Lunch at Tintern.

Subscriptions due August 1st should be paid to the Honorary Treasurer, J. T. Towne-Mason, 6, Southernhay, Exeter.

Hotels in Cardiff are—"The Park," "The Royal," "The Angel," "The Great Western," &c.

PAPERS, DEMONSTRATIONS, &c., HAVE BEEN PROMISED AS
FOLLOWS:—

Papers.—"The Borderland of Medicine and Dentistry," by C. T. Vachell, M.D.Lond.; "Dental Hygiene," by J. T. Browne-Mason, L.D.S.Eng.

As the subject of these Papers is deemed of special interest and importance, it is proposed that the after-discussion should be of the nature of *a conference on dental hygiene*.

Demonstrations, &c.—"Modelling," by J. Walker, M.D.St.And.; "Bridge-Work," by J. H. Gartrell, L.D.S.I.; "Contour Vulcanite Work," by Harry Rose, L.D.S.Eng.; "Lightening of Suction Cases," by J. C. Oliver, L.D.S.Eng.; "Weston's Metal," by Graham W. White, L.D.S.I.; "Models of a case of Unilateral Absorption of the Alveolus in the Upper Jaw," by J. T. Browne-Mason, L.D.S.Eng.

The After-Meeting, at 3 p.m., will be open for demonstrations, casual communications, and discussions on professional matters. Members are requested to consider this an open meeting, and to share the responsibility of its success by contributing subjects for useful discussion, by bringing forward specimens of interest, or by giving demonstrations.

Annual Meeting of the Eastern Counties Branch.

THE Annual General Meeting of the Eastern Counties Branch was held on Wednesday, the 26th of June, in the Board-room of the Essex and Colchester Hospital, the chair being occupied by the President, Mr. FRANK HALL, L.D.S.I. The following members of the Council attended: Mr. J. Fenn Cole, L.D.S.I., Mr. George Cunningham, M.A., L.D.S.Eng., D.M.D., Mr. R. Payling, Mr. R. W. White, M.R.C.S., L.D.S.Eng., and the Hon. Secretary, Mr. W. A. Rhodes, L.D.S.I. There were also present the following ordinary members: Messrs. W. Buck, W. Marsh, and E. A. Dixon, Colchester; Mr. N. Tracy, Ipswich; Mr. R. P. Lennox, Cambridge; Mr. S. A. T. Coxon, Wisbech; and Mr. W. B. Bacon, President of the Southern Counties Branch of the Association.

The Members were met at the Hospital by the Physician (Dr. Wallace), who conducted them over the various wards of the In-

stitution. The general meeting commenced at 10.30 a.m., when the Hon. Secretary read a letter from Mr. Amos Kirby, L.D.S., the President-Elect, who expressed regret that he was unable to be present, owing to an attack of gout.

The CHAIRMAN, having alluded to Mr. Kirby's great ability as an electrician, said he hoped they would have the pleasure of seeing him at their next Annual Meeting.

The HON. SECRETARY read his report as follows :—

MR. PRESIDENT AND GENTLEMEN,—The report your Council are enabled to make is on the whole of a satisfactory character—the number of Members of this Branch being higher than at any previous period of its existence. Six new members have been elected during the past year, and it is probable that this is no longer the smallest Branch of the British Dental Association. It is a matter much to be regretted that of the three candidates elected at the last Annual Meeting at Northampton—all of whom took advantage of the hospitality of our Members—two failed to pay their first subscription, and thus in default were struck off the list of Members of the Branch. Your Council have to regret the resignation of Mr. J. B. Bridgman, an original Member of the Eastern Counties Dental Association, hon. treasurer from its commencement and afterwards, until last year, on its affiliation with the British Dental Association, as its Eastern Counties Branch. During the past year many extremely important questions have been before the Representative Board, and no Members of that Board have been more assiduous in their attendance than those sent by you. Advertising in its grossest form seems to be on the increase in this district, and it behoves every reputable practitioner to join our Association, and thus to assist with their means and by their attendance at these meetings in drawing the attention of the public to the unprofessional modes of practice of a certain class of men whose main object seems to be to gull a much too credulous people.

The report was followed by a brief discussion with regard to the place of the next annual meeting. It was finally decided to hold the meeting at Lowestoft, and Mr. Stringfield, of that town, was elected President for the ensuing year. Mr. F. Hall and Mr. A. Kirby were re-elected Members of the Council, and Messrs. Lennox and Tracy were added to that body.

In proposing a vote of thanks to Dr. Wallace and the Governors of the Essex and Colchester Hospital for their kindness and

courtesy, the CHAIRMAN remarked that they had been all struck with the admirable cleanliness of the Institution.

Mr. HALL, the retiring President, then delivered the following address :—

There is always a double duty imposed upon a President ; the first one is easy and a grateful one to all concerned, and I proceed to undertake its responsibility by wishing you all heartily welcome to Colchester. The second duty is one less easily accomplished, and one which bolder and abler men than I have attempted to escape from—and that is to deliver an address. If I fall *short* you will forgive me, I know, but if I prove *long* my pardon may be less readily granted. In this old city, where there are old walls and old gates, telling of its former self, cramped and narrowed within fixed limits, and countless antiquarian relics of a dead race—I mean the Romans of Cæsar's legions—we may well look back upon the past and compare its bygone glories with the inceptions of to-day. We may, I think, congratulate ourselves that we live in the nineteenth rather than the second century, for, shorn of the poetry and myth which nearly two thousand years have clothed Roman Britain with, I think it must have been a trying place to reside in, and, personally, I would rather be in Colchester of to-day than in the Camp by the Colne of the then.

Dealing with Branch business, I need say but little. We are a small Branch, but our numbers are not less nor is our energy decreased. The main events since last year are that the work of our Branch was specially commended in the Annual Report at Dublin. Then, of course, there was a meeting at the Dental Hospital of Presidents and Honorary Secretaries of Branches to discuss a scheme for the redistribution of the counties among the different Branches, and the county of Bucks was added to the district covered by this Branch. When there are so many burning questions more or less closely in relation with dentistry as an art and as a profession, it is not easy to make the choice of a subject. What, let us ask ourselves, have been the advances in dental science during the past year ? I, like most busy men, have but little leisure for reading long articles, but am always ready to find out practical points. Pathology, as I understand the matter, should help us in treatment, and, therefore, we cannot afford to ignore its teaching. There has been a great deal done to elucidate the pathogenesis of pyorrhœa and alveolus, and as far as I can gather, we should regard it as a locally contagious disease, com-

municable from one diseased tooth to another by means of the pus in the pockets. I would, however, suggest that the accumulation of food about the tartar formed around the teeth may also play a part by causing inflammation, and then infecting the pus so formed. In reimplantation we have learnt that even in the hands of the most expert the artificial socket gradually shrinks up and forces out the tooth which had been introduced into it.

The operation is not without grave dangers, and seems discredited even by its original proposers. Immediate root filling and the kindred subject of disinfection of the pulp chamber and root canals have justly attracted much attention. That immediate root filling is useful and practicable in many cases has, I think, been amply shown; but there is danger of having too much courage of our opinions, and by not selecting our cases with the greatest care, bringing opprobrium upon a valuable procedure. Of antiseptics we have not only the experience of ourselves, but the researches of our surgical brethren. I have here a table showing the relative power of various antiseptics, which is worth careful study. To epitomise its conclusions we may say that mercurial preparations are the most valuable; the eugenol and the essential oils are valuable; and that the peroxide of hydrogen is indispensable. Of mercurial preparations the cyanide, or more accurately, oxy-cyanide, has many advantages over other salts, oxy-cyanide of mercury compared with corrosive chloride.

(1) Its solution has a slightly alkaline reaction, and precipitates albumen only slightly.

(2) It is less irritant than solutions of sublimate.

(3) There is less absorption by tissues than in case of sublimate.

(4) Solution of 1-1500 does not attack, except slightly, the materials used in surgical instruments.

(5) Tested by its power of keeping soup, the anti-septic power showed itself six times greater than that of bichloride.

(6) Tested by the power to destroy micro-organisms the advantage was slightly in favour of bi-chloride—1.1400 to 1.1300.

(7) Employed on suppurating surfaces, or to render a mucous surface antiseptic, it furnishes much better results, because of the tolerance by the tissues and feeble absorption.

(8) The cyanide of mercury has about the same properties, but the oxy-cyanide is more powerful against micro-organisms.

TABLE.

Taken from a Paper by Dr. G. V. Blake in "Archives of Dentistry."

Aseptol (Merck's 33.3 per cent. sol.),	1-10, 1-15, 1-20, 1-25.
Benzoic acid (sol.),	1-1, 1-2, 1-3.
Betanaphthol (sol.),	1-1, 1-2, 1-3, 1-4, 1-5.
Boracic acid (sol.),	1-4, 1-6, 1-8*, 1-10.
Carbolic acid,	1-300, 1-560, 1-900.
5 per cent. solution,	1-8, 1-10, 1-12, 1-15, 1-20.
Copper sulphate (sol.),	1-100, 1-200*, 1-400.
Creasote (commercial),	1-400, 1-500, 1-900.
Morson's wood tar,	1-700, 1-910, 1-1200.
Solution,	1-1, 1-2, 1-4, 1-8.
Hydronaphthol (sol.),	1-1, 1-2, 1-3, 1-4, 1-5.
Iodoform,	Growth in the saturated solution among the undissolved powder.
Mercuric bichloride,	1-25000, 1-50000, 1-100000.
1-500 solution,	1-50, 1-100, 1-200.
Resorcin (6.5 per cent. sol.),	1-4, 1-6, 1-8*, 1-10.
Oil of bergamot,	1-200, 1-400, 1-720.
Solution,	1-1, 1-4, 1-5.
Oil of cajeput,	Growth in the emulsion.
Oil of cassia,	1-3000, 1-4000, 1-5000*.
Solution,	1-2, 1-3, 1-4, 1-8, 1-10*.
Oil of cinnamon (Ceylon),	1-2000, 1-2700*, 1-4000.
Solution;	1-1, 1-2, 1-3, 1-4*, 1-5.
Oil of cloves,	1-1100, 1-1200, 1-2000.
Solution,	1-1, 1-2, 1-3*, 1-4.
Eugenol,	1-640, 1-800, 1-1200.
Solution,	1-1, 1-2, 1-3, 1-4*, 1-5.
Oil of copaiba,	Growth in the emulsion.
Oil of coriander,	Growth in the emulsion.
Oil of cubebs,	Growth in the emulsion.
Oil of eucalyptus,	Growth in the emulsion.
Eucalypti extract,	1-100, 1-240, 1-480.
Solution,	1-1*, 1-2, 1-3, 1-4, 1-5.
Eucalyptol,	1-100, 1-380, 1-650.
Solution,	1-1, 1-2, 1-3, 1-4, 1-5.
Oil of fennel,	Growth in the emulsion.
Oil of mustard,	1-1000, 1-1500, 1-2000.
Solution,	1-1, 1-2, 1-4*, 1-6, 1-10.
Oil of pennyroyal,	1-480, 1-720, 1-960.
Solution,	1-1, 1-2, 1-3, 1-4, 1-5.
Oil of peppermint,	1-375, 1-600, 1-800.
Solution,	1-1, 1-2, 1-3, 1-4, 1-5.
Menthol (sol.),	1-1, 1-2, 1-3, 1-4, 1-5.
Oil of sassafras,	1-270, 1-540, 1-800.
Solution,	1-1, 1-2, 1-3, 1-4, 1-5.
Oil of thyme,	Growth in the emulsion.
Oil of turpentine (Merck's rec.),	1-500, 1-600, 1-800.

Solution,	1-1, 1-2*, 1-3, 1-4, 1-5.
Terebene,	1-480*, 1-800, 1-1400.
Solution,	1-1*, 1-2, 1-3, 1-4, 1-5.
Terpinol,	1-520, 1-720, 1-960.
Solution,	1-1, 1-2, 1-3, 1-4, 1-5.
Oil of valerian,	Growth in the emulsion.
Oil of wintergreen,	Growth in the emulsion.
Salicylic acid (sol.),	1-1, 1-2, 1-3*, 1-4, 1-5.
Oil of wormseed,	1-280, 1-720, 1-880.
Solution,	1-1, 1-2, 1-3, 1-4, 1-5.

EXPERIMENTAL TESTS IN BROTH CONTAINING FIVE PER CENT.
OF EGG ALBUMEN.

In the following tests, three solutions of the bichloride of mercury were used. A 1-500 solution of bichloride of mercury was made and divided into three equal parts. That marked (p) was left plain. That marked (a) received 5 per cent. of hydrochloric acid. That marked (s) received 10 per cent. of chloride of sodium.

Solution (p),	1-5000, 1-7500, 1-10000, 1-15000.
Solution (s),	1-5000*, 1-7500*, 1-10000, 1-15000.
Solution (a),	1-5000*, 1-7500, 1-10000, 1-15000.
Solution (p),	1-1000, 1-2000**, 1-3000**, 1-4000*.
Solution (s),	1-1000, 1-2000***, 1-3000** 1-4000*.
Solution (a),	1-1000, 1-2000, 1-3000, 1-4000.
Carbolic acid (5 per cent. sol.),	1-8, 1-10, 1-12, 1-15, 1-20.
Oil of cassia (sol.),	1-3, 1-5, 1-8, 1-10*.
Copper sulphate (sol.),	1-100, 1-200, 1-400.

Whilst upon the subject of disinfection, I should like to say a little about a matter which has not, I think, received enough attention—I mean the disinfection of the mouth in general. We know very little about the varying states of the saliva, but we are told on good authority that it will, under some unhealthy conditions, prove a virulent poison when injected into the veins of small animals. Now we are all well aware how very foul many mouths become, and how tainted is the saliva in such cases. What I would insist upon is this; it is no use to try to render a pulp chamber aseptic if we permit the buccal air to be poisoned by a foul mouth, and this even when we are working over the rubber dam. Of course my contention is yet stronger when the dam is not used. From disinfectants to pain obtundants is not a wide jump, but I will only say that cocaine, formerly so *enthusiastically* cried up, has proved of less value than we had hoped. The alarming symptoms which so often follow its injec-

tion seem to me to render its use too risky for us. There was, I am told, a very grave case at Oxford not long since, in which a well-known teacher in that University was only restored to life after three hours of artificial respiration, rendered necessary by respiratory paralysis following cocaine injection. I will not dwell upon the tempting subjects of metal cap crowns and bridge work, except to say that I think we English are far too exclusive and conservative, and lack enterprise and daring. We should hear less of the so-called American dentist, about whom our fair patients sometimes gush, if we were sufficiently abreast of the times to know just what is doing and how far novel procedures are reliable, and when applicable. It may be said that we have few opportunities of learning modern dodges, but this, I think, is easily to be remedied. Have we not post graduate classes? and if we make a demand for higher, fuller and more comprehensive treatment, we are sure to get the supply. While we go and stand agape at poor work badly done we must expect to have the same fare served to us again and again, but when we show that we possess the power of learning good work and don't want merely to relearn what we should have mastered as students, we shall soon find classes such as have been held at the Metropolitan Hospitals, ready to receive us and help us to go ahead in our profession.

Then I should like to say we ought to go in for more practical work at our meetings. It is all very well to show results and read learned papers about this, that, and the other; but it would, I am sure, be far more useful if some of us brought a patient with us and just showed each other any useful and new methods of treating teeth. I believe the demonstration system is most useful and likely to be fruitful in good results. I should like to see it take a part in every Branch meeting. We have heard something lately about separating the mechanical part of our profession from the surgical. Such a divorce could never, I believe, be effected, nor would a change in that direction be useful to us, for it appears to me there is a mischievous tendency among many to neglect the mechanical side of our calling, thus causing injury alike to dentist and patient. I would go so far as to say that he is the best dentist who is the best able to sit down at his workman's bench and turn out good work. If this be so, it is not a severance between the two branches we require, but a more closely knit union and a fuller development of the mechanical

training of every one going in for the L.D.S. diploma, and a really thorough examinational test in purely mechanical and practical work.

The wars of the mallets need not detain us, but may serve to point our attention to the immense improvements which have recently been made in practical appliances to aid us in our operating rooms. I am no electrician, but I cannot help recognising that a competent knowledge of electric mechanics is now almost a necessity for a dentist.

Turning from the practical to the ethical side of our profession we find ourselves treading upon less sure grounds. Who will deny the humiliation we all feel when, reading our daily and provincial papers, we come upon the advertisements of so-called dentists? We can individually assist the profession at large by keeping a very wideawake outlook upon those who impersonate others, and those who, as soon as a death occurs, adopt the name and title of the deceased and continue his practice. All deaths, removals, advents of fresh men ought to be promptly reported to headquarters, as a correct Register is a most important matter to us dentists.

There is yet another point upon which I am anxious to say a few words, and that is the bearing of Members of the Association towards those who have not joined it. In this matter I do not think I am disloyal to our Association when I say I think we are often unwisely intolerant of the "outsiders." We believe ourselves to be the pioneers of the profession, banded together to check its abuses, to achieve its advancement, and promote its well-being, but those who are not admitted to our councils do not know all we have done, nor do they appreciate our efforts to do better in the future. To alienate these men is impolitic and unnecessary; to meet them upon their own ground and discuss with consideration their view of the situation, and, if possible, win them to our views form a consummation devoutly to be hoped for. Rightly or wrongly, many men, whose opinions are certainly worthy of being considered, fear undergoing the process of being jumped upon, and so hold aloof from us. For my part I should say—"those who are not against us are for us," and I should like every member when he attends a Branch Meeting to bring with him some friend—a non-member—that he might see what we do, and learn how much good he could do by throwing in his lot with us. If, as was suggested above, we make our meeting not only polemic

and social, but also opportunities for demonstrations, and thus acquiring fresh knowledge of the practical side of our calling, we should allure outsiders to join us and show the practical-minded ones who like a *quid pro quo* for their annual subscription, that they are laying out their money to very first-rate advantage.

The concluding portion of the meeting, together with the concluding portions of the Midland and Southern Counties Annual Meetings and the whole of the Annual Meeting of the Central Counties Branch, will appear in our August number.

ORIGINAL COMMUNICATIONS.

Continuous Gum Work.*

By WILLIAM SIMMS, L.D.S.I.

It has long been recognised that in continuous gum work was to be found the ideal appearance and colour for the construction of that portion of the artificial denture designed to replace the natural gum, and this being so, it seems somewhat surprising that this branch of the dentist's art, so far from keeping pace with the general advancement in dental science, has rather retrograded and fallen into the background.

Many difficulties, however, have always stood in the way of those who desired to obtain success in this class of work. In former years the rapid fusing of the intractable substances composing the mineral body and gum colour was not possible, and the results obtained were only secured after long and tedious processes, to the great discouragement of even the most patient and persistent. Probably also the introduction of vulcanite as a base for artificial dentures (although in the main a great boon), tended to draw away the attention of the dentist from this branch of mechanical art.

In 1883 Mr. A. B. Verrier, of Weymouth, introduced to the profession in England a new and compact gas furnace, by means of which he claimed to be able to fuse mineral gum in about ten minutes, and although the performance of this furnace has not in the hands of many come up to the promised excellence, still the greatest credit is due to Mr. Verrier for its introduction. The impetus which the introduction of this furnace gave to the con-

* Read at the Annual Meeting of the Midland Counties Branch, held at Liverpool, May, 1889.

struction of mineral gum dentures could, however, only be spasmodic and temporary, for, although a marked advance on previous gas furnaces, it lacked power to thoroughly and satisfactorily do its work ; and the result has been that many dentists have become discouraged and have ceased to use them.

In a demonstration I had the pleasure to give before the members of the Manchester Odontological Society, in November of last year, I showed that by the adaptation of the principle of the hot-air blast to the gas furnace, its capacity could be very greatly increased, and the necessary heat obtained with ease and quickness. To work these small furnaces satisfactorily it has been found that an abundant supply of gas or gasoline is necessary. In the case of gas, a pipe with a bore of not less than half-an-inch will be found to be necessary, and it is also important that the regulating tap should have a bore of the same diameter. In a new gas furnace we intend shortly to introduce to the profession, by a suitable arrangement of pipes, and by the utilisation of the waste heat of the furnace merely, a heat can be obtained of over 2000° Fah. in less than eight minutes, and the Allen gum body and enamel fused in that time.

We had hoped to have shown at the present meeting the new furnace embodying this principle and also other improvements, designed by Mr. Houghton and myself, but the Furnace not being to hand, we have had to content ourselves with showing the model of the new furnace, and demonstrating with such an imperfect one as we could put together in a short space of time, yet even with this furnace we have shown that the air for the blast is delivered towards the end of the firing process, at a temperature exceeding 400° Fah., and the necessary furnace heat obtained quickly.

As bearing upon the question of the cost of working these furnaces it will, of course, be evident that there is great economy, as less gas is required, and for a shorter space of time in comparison with other gas furnaces.

In working the furnace to-day, we have also used Fletcher's Benzoline Apparatus, and having had a little experience with this apparatus, I can confidently recommend it as quite equal, if not superior to gas. It is equally applicable for use with the hot blast, and it has one great advantage over gas, viz., it can be used quite safely with a cracked muffle, as there is no fear of discolouration. Mr. Minshall, of Pendleton, who has used it for

some time (and who has kindly lent me his benzoline apparatus for use to-day) assures me that he has found no difficulty in the use of it. The cost is 2s. per gallon, and this quantity will heat the furnace eighteen or more separate times. I ought to mention that there is *one* objection to benzoline, viz., its somewhat disagreeable odour, which is not confined to the room in which it is being used.

The use of a foot bellows for both gas and benzoline is of course necessary, and Mr. Fletcher's No. 5 Bellows will be found to be quite satisfactory.

I will now, with your permission, say a few words about the construction of artificial dentures in continuous gum work.

In regard to the teeth to be used, it will be found that no English teeth will stand the necessary furnace heat. Massey's teeth keep their colour best of English make (but are unfortunately liable to crack), but all others hopelessly lose their colour, and some of them their shape also. This will be seen by specimens I hand round, and which have been exposed to the same heat as the gum enamel. White's and Justi's teeth of American make are quite reliable, and, while they keep their colour well, rarely, if ever, crack. Teeth, even of the same American manufacturer, seem, however, to vary somewhat, as some of them (especially of the less dense kind) are liable to become blistered during the firing process.

As the material forming the continuous gum is of its very nature fragile, it will be found necessary to use hard platinum plate as a rigid base for the artificial gum; except in complete sets, when the base-plate is *wholly* of platinum, when thick soft metal may be preferred. But otherwise No. 4 hard platinum should be used, or in cases of very weak shape a size thicker may be used with advantage.

If the case in hand is to have a base-plate of vulcanite, and if moderate thickness of artificial gum is allowable, the teeth should be arranged in the usual way in wax and tried in the mouth. If found correct, the incisors and bicuspid's may be taken off the wax plate (a plaster bite having been previously taken to facilitate the replacement of the teeth), the wax so removed as to provide for a thin base-plate of rubber, leaving a wax rim which, when reproduced in rubber, will afford protection to the thin edge of mineral gum on the labial surface. As the mineral gum-facing is intended only to go back as far as the second bicuspid's, the molars are left

standing. Castings are now to be obtained and a narrow platinum plate struck up.

If, however, the case is one which, when completed, must have the gum portion too thin to allow of the thickness of rubber, platinum plate, and mineral gum, the narrow plate must be so struck up as to directly fit the model without an intervening plate of wax; but before casting, the model should be so arranged as to provide for the turning up of the platinum plate to afford a protection for the frail edge of mineral gum. Cases representing both methods are presented for your inspection to-day. The plate struck up, the teeth are waxed to their position and the case invested for soldering, in a mixture of plaster and asbestos in equal proportions. The wax removed, a band of platinum plate should be fitted under the pins of the teeth, and extended to the base-plate. The pins are now bent over the band, and the whole heated up for soldering. For this process only pure gold should be used, and to thoroughly flow it, a blast bellows will be found necessary.

When removed from plaster investment, and after thoroughly freeing from borax, &c., by pickling in hydrochloric or nitric acid, the surface of the plate is roughened or indented, and all is ready for the application of the gum body. The only gum body and colour at present obtainable at the dépôts are those prepared by S. S. White, from the formulæ of Dr. Allen, and fortunately these are satisfactory. Various manufacturers have from time to time produced a gum body fusing at a lower temperature, but it is quite useless for this work, as no colour is provided which fuses at a similar temperature.

In the manipulation of the body, a spatula and several small camel-hair pencils are necessary, and a stiffer brush to free the teeth from any adherent particles which otherwise would fuse to the teeth and render them unsightly.

In applying the body use merely sufficient water to make the particles of body adhere. Those inexperienced are disposed to apply the material in too moist a condition, and thereby add to their difficulties. It will add greatly to the strength as well as to the appearance of the piece if the mineral gum is applied to the palatal as well as the labial surfaces of the plate, as in several pieces I have the pleasure to pass round. The body having been contoured to the judgment of the artist, and particular care having been given to the definition of the necks of

the teeth, the thin end of the spatula should be passed through the material as if to divide the body into as many sections as there are teeth. The piece may now be placed in the furnace and should be sufficiently fired in about six minutes from the time the gas is lighted. When cold enough to take out to handle (which will be in about $1\frac{1}{2}$ hours) it will be found that by the contraction of the material the slits made by the spatula have enlarged to twice or thrice the size, but otherwise the piece should not be cracked. During the first firing of a piece there is inevitable contraction, no matter how compactly the body may have been applied, and it will be found better to determine the lines of fracture by previous separation than to allow the piece to crack irregularly, as it certainly would if no lines of separation were made. A second firing is always necessary to fill up the cracks caused by contraction, and it is desirable to give the second firing a minute longer than the first, that is, about seven minutes.

The final firing is of course for the gum colour, which should be applied on the body to the thickness of a threepenny bit, and a little thicker between the teeth, where a deeper colour is natural. There is room for a great deal of artistic skill both in the contouring of the gum body, and in the application of the colour.

In firing for this final process it will be found that about eight minutes is the time required, but the exact moment can only be determined after a little experience. When the piece is just about lost to sight is the happy moment for turning out the gas, but more exact knowledge may be obtained by having a test piece at the end of a piece of platinum wire, and which may be withdrawn from time to time for examination. It should be remembered that the end of the muffle furthest from the mouth is the hottest, and for that reason two pieces cannot successfully be fired at the same time, except when one piece is for the firing of the gum body, and the other for the firing of the colour; in such a case the piece having on the colour would be placed in the hottest end of the furnace. Although it is not necessary to rest the pieces in the furnace on platinum gauze or plate, it is desirable to do so, as the metal reflects the heat to the surfaces to be vitrified; in any case, however, the piece should not rest directly on the metal, as the gum is liable to become attached, but pieces of hard plaster intervening will effectually prevent this.

In firing the gum colour, it is better not to too highly glaze the surface of the gum, as in this condition there seems to be a greater

liability to craze or crack than when the gum is a little less highly vitrified. Indeed, this matter of crazing is one of the difficulties to be overcome, for although the cracking of gum colour is no serious detriment to the strength of a piece, it undoubtedly detracts from its value as a work of art.

As one means of preventing crazing, I have found it better after the piece is finally baked to thoroughly close up the front of the furnace to prevent the ingress of cold air, and by this means to spread the final cooling process over four or five or more hours. Indeed, one disadvantage of the material of which such furnaces must be constructed is that they allow the furnace to cool down too rapidly. Probably a cap or cover of asbestos sheeting over the whole furnace would delay the cooling for some hours. The necessity for slow cooling seems to apply only to the last stage, viz.: after the application of the gum colour. So far I have not satisfactorily solved the question of removable gum facing for vulcanite work, but I have every belief that this will be ultimately accomplished. According to present experience the most satisfactory way of attaching a gum facing to a vulcanite set, (presuming the gum section to represent ten or twelve out of the fourteen teeth) is to solder a platinum wire to each end of the piece (before firing) and allow it to be imbedded under the molar teeth further back. By the adoption of this means the facing is securely held, and in case of repair, the molar teeth can be prised from their position, the wires bared, and the gum section removed without injury. For the replacement of a tooth, however, the fractured tooth can be ground away with the corundum wheel, a new tooth filled and fastened with vulcanite in the ordinary way. For the attachment of sections where the plate is stamped to fit the model direct, the method of procedure is equally simple, as loops of platinum can readily be soldered to the palatal portion of the plate for attachment to the vulcanite plate.

I need not detain you with any remarks in regard to the construction of continuous gum dentures on platinum plates, pure and simple. Where the weight is no objection the method may be pursued with every advantage, and is easily repairable. A specimen of work of this description, the work of Mr. Houghton, is shown to-day. With your permission, however, I should like to say a few words about the system of gum work advocated by Mr. James Cumming, of Glasgow, in a paper read before the members of the British Dental Association at the annual meeting

held in that city in 1887. Probably all the members of the Branch have read his paper and are familiar with his method of procedure. The process he advocated may be described as a method of producing socketed gum facings, the teeth being inserted in prepared sockets after firing, and in case of fracture, being of course as easily repairable as an ordinary fracture in a vulcanite set. Undoubtedly this system seemed to have many advantages, and the greatest credit is due to Mr. Cumming for the conception of it.

As, however, the beauty and attractiveness of continuous gum work is the happy and complete union of the gum to the teeth, the very part most exposed to view and most inviting comparison with nature, and as, moreover, it is impossible to produce a perfect and satisfactory socket in such a contractable substance as mineral gum, I think it will, unfortunately, be found that the apparently great advantage of this process is really a great disadvantage. This disadvantage is all the more apparent when the mineral is exposed to the requisite heat to thoroughly vitrify the material, as the contraction is thereby greater. I believe also that it will be found that no process which involves the use of soft platinum will be found to give a sufficiently rigid facing to bear the ordinary strain to which it will be subjected. For these reasons, therefore, I believe that Mr. Cumming's process, unless modified and improved, will not be found reliable and satisfactory.

It has often been stated as an objection to continuous gum work, that it is impossible to use gold plate in connection with it. I do not think the time will ever come when mineral gum can be fused upon gold; but I have the pleasure to show a case where the two are combined, without the use of vulcanite, and I venture to express the belief that in the future, by the adoption of similar means, these two beautiful materials may be found in successful combination, to the delight not only of the patient but of the dentist; for to the true dentist, animated by no mere sordid spirit, what true enjoyment comes to him in the execution of work which exhibits the happy combination of beauty and utility.

Objection to continuous gum work is sometimes expressed on the score of the expense and trouble involved, and although there is some force in these objections, I think it will be found that work of this kind will always command, as it should, a satisfactory remuneration. The difficulties also inseparable from novel and unusual work will become less as the dentist becomes familiar

with the processes involved, for although continuous gum work may not successfully be undertaken by a work-room apprentice of the ripe experience of twelve or eighteen months, there is no part of the work beyond the skill of the average workman. One word of advice I venture to give to those who commence this work having had no previous experience, and that is, to make half-a-dozen sets for cases in practice without seeking an extra fee, as thereby some experience will be gained which will both justify and command a higher fee.

I express my regret that the little time at my disposal has prevented my presenting as complete a paper as the importance of the subject demands, but if I have succeeded in arousing your interest and enlisting your cordial co-operation, I shall feel that we may confidently look forward to great progress in the art of continuous gum construction in the future. (For discussion see page 391.)

Anæsthetics in Dentistry.*

By LLEWELLYN MORGAN, M.D.

GENTLEMEN,—I shall divide the subject of anæsthetics in dentistry into—

- (1) General anæsthetics ;
- (2) Local anæsthetics.

The dental profession is one that can look with great pride on its connection with the early history of anæsthetics, both in this country and also in America. The extraction of teeth is attended with so peculiarly intense a sensation of pain, and one which is so badly borne by many highly nervous people, that it is no wonder that dentists were ever keenly alive to any suggestions on bodies having anæsthetic properties. Prior to the year 1844 surgeons were content for the most part to put their patients under the influence of various narcotics, of which opium was the chief. This, however, could have been of little use to the dentist, who, if many teeth were to be extracted, was obliged, in most cases, to give many sittings. Sir Humphry Davy, it is true, in 1799, had reported that "as nitrous oxide in its extensive operation appears capable of destroying physical pain, it may probably be

* Read at the Annual Meeting of the Midland Counties Branch, held at Liverpool, May, 1889.

used with advantage during surgical operations ;" but this seems not to have been taken up seriously till in 1844 Horace Wells, an American dentist, took nitrous oxide gas from the hands of Mr. Colton and had a tooth extracted by a Mr. Riggs without pain. Owing, however, to the faulty nature of the appliances Wells, though often successful in producing unconsciousness, was not invariably so, and this being the case, at a public demonstration held in the theatre of the Boston Hospital the anæsthetic was dubbed as useless, with the result that Wells was ruined and died in destitution. Mr. Colton, however, was more successful. After about 20,000 administrations by him the new anæsthetic found its way to London in 1868, when its merits were shown at the Dental Hospital, soon to spread over the country. Such, then, is the early dental record of "gas" administration ; let us now turn for a moment to the early record of *ether*. We find that in 1842 ether was given by a student named William Clark for tooth extraction. The first, however, to thoroughly grasp the use of ether as an anæsthetic was Wm. Morton, a pupil of Horace Wells, who, at the suggestion of a Mr. Jackson, a scientific chemist, used ether and extracted teeth painlessly. This was in 1846, and in the same year Mr. Robertson gave ether and extracted teeth in London. In 1847 Dr. Simpson (afterwards Sir James), at the suggestion of Mr. Waldie, the Master of the Apothecaries' Hall of this town, had some chloroform made for him, and on the result of experiments made with this body read his paper before the Edinburgh Medico-Chirurgical Society, after which the use of chloroform spread like magic. Such then in brief outline is the early history of the chief general anæsthetics, and you will have noticed that two of them have been given in their earliest infancy to dental patients.

Special Considerations in Dental Operations.—I wish now to point out to you how operations on the teeth under anæsthetics differ from surgical operations in general under the same influence. In the first place they have with all operations about the mouth the obvious disadvantage of requiring inhalation to cease whilst the operation is in progress. This may be obviated by using the chloroform inhaler, which bears the name of "Junker's," and passing the vapour into one nostril. This, however, has the disadvantage in dental practice which the administration of chloroform *per se* always has, and which I shall discuss later on. Seeing, then, that the administration must be suspended during the

period of operation, and taking it for granted that in most cases in which chloroform or ether are given there are several teeth to be extracted, it is necessary, with the view of giving the utmost time to the operator before the patient recovers consciousness of pain, to push the anæsthetic to a further point than would be necessary in cases of those operations which allow the anæsthetic to be given continuously. Again, the administration is given while the patient is in the dental chair, for whatever may be said to the contrary we cannot expect dentists—at all events with private patients—to operate in any other position. Now there is no doubt that the semi-upright position does throw more work on to the heart and so pre-dispose to syncope. Another difficulty which presents itself in these operations is the falling back of broken teeth, or even, as has happened, of portions of broken forceps, &c., into the larynx. The amount of blood which necessarily runs back and passing over the glottis is swallowed tends to excite vomiting, however careful we may have been to insist on an abstinence from food, not only hindering the operation, but tending to bring the patient back to consciousness. You will see, therefore, that general anæsthesia in dentistry is carried on under various difficulties, and how necessary it is therefore for those who give anæsthetics for this branch of surgery to fully realise this important matter, and how it behoves them to be careful not only in the choice of the anæsthetic but also in the manner in which it is administered.

Coming to the question of the best anæsthetic to use, we have first to consider what will be the probable duration of the operation, for upon this depends to a large extent our choice. Suppose, for instance, all that has to be done can be finished inside of one minute, in that case there can be no doubt that nitrous oxide will answer every want. While this paper has been in course of preparation there has appeared in the *Lancet* of April 14th an account of some experiments with oxygen and nitrous oxide combined, conducted by Dr. Frederic Hewitt at the Dental Hospital. These have tended to prove that by the combination of twelve and a-half per cent. of oxygen with nitrous oxide, the symptoms of asphyxia and the jerking movements can be prevented. Dr. Hewitt gives the gases from an ordinary gasometer, in which they are mixed in the proper proportions. This he ensures by having the bottles containing the oxygen and nitrous oxide discharging into the gasometer by separate pipes, and knowing its capacity, he

first lets in the twelve and a-half per cent. of that capacity, and then fills up with the gas.

He finds that the mixture should be given under pressure, which he ensures by taking off the counter-balancing weight from the gasometer. Not only, he says, are the symptoms of asphyxia and jactitation removed, but the period of anæsthesia is prolonged. For these three reasons I venture to predict that if the results obtained by Dr. Hewitt are confirmed, this method will become very popular with the dental profession. But suppose on the other hand we have some buried stumps, or a large number of teeth to deal with, then the choice lies between chloroform and ether. In making a choice between these two bodies several facts must be borne in mind. As we have said before, the same upright position in persons with a weak heart or an idiosyncrasy against chloroform increases the tendency to syncope whilst using that body. Its action moreover is not so quick as that of ether, but there is less struggling, and it is to most persons much pleasanter to take, not producing the feeling of suffocation that the latter agent does. Patients are somewhat longer in recovering consciousness from chloroform, which is an advantage; with ether the amount of immediate after-effect is also greater, the patient remaining for some time in a semi-drunken condition. Against these facts in favour of chloroform must be put the undoubtedly greater safety in the use of ether. This is clearly shown by Dr. Richardson, who estimates the deaths under chloroform at one in 2,500 to 3,000 cases, and under ether one in 23,000. I am not entering of course into the discussion of which anæsthetic is the best in patients with various diseases of heart or lungs, which may be summed up roughly—disease of heart, ether; disease of lung, chloroform. Children bear chloroform well, and I always give it to them.

Methylene is now, I think, admitted to be (as used in this country) a mixture of chloroform four parts and alcohol one part, and is therefore almost as dangerous as chloroform. The pure methylene dichloride is said to be a convulsant and rapidly fatal. Seeing, then, that there are many advantages with chloroform, and that these are counter-balanced by the greater safety of ether, the two are often given together, diluted as it were with alcohol in the proportion of one of alcohol, two of chloroform, and three of ether, and the combination has been called the "A. C. E. Mixture." With this however the patient takes some time before he is com-

pletely unconscious—at least this is so with the open method. Another combination, and one which is of great use, is the administration of gas followed by ether. This is by far the easiest and most pleasant method, and one that I should advocate most strongly in hospital practice; owing, however, to the somewhat cumbersome nature of the appliance for its administration, it is not applicable in private practice. The method which I have for some time adopted is as follows. I administer chloroform until the patient is in a condition of semi-consciousness, when I substitute ether, and continue with this agent till the close of the operation. This I consider has several advantages. In the first place it is quick, in the second safe, as the depressing effect of the chloroform on the heart is at once counteracted by the ether; in the third the pulse is first steadied by the chloroform in nervous patients, in a way that it is not with ether alone; and in the fourth the patient is longer in recovering consciousness than with ether only.

We will now pass on to describe the precautions which it is advisable to take prior to the administration of an anæsthetic. All clothing which compresses the neck or chest, such as neckties, collar, or stays should be loosened. With chloroform or ether the patient should not have taken solid food for some four or five hours previously; at the same time it is not well that he should come to the operating chair exhausted by a long fast, so that a basin of beef tea or a cup of boiled milk should be taken some two and a-half hours before the administration. The bowels should also be well moved before operation. It is not sufficient to give vague directions in these points, but they should be explained fully and explicitly. In all cases the patient should be spoken to kindly and assured that he will feel no pain, and that the administration is quite safe. In the case of chloroform administration to some persons of a nervous character, it is well to give a small glass of good brandy. Open the mouth, and if a plate is being worn ask the patient to remove it. Let the operator make a note of the condition of the teeth and how he proposes to operate, so as to be ready the moment the operator gives the word.

In the case of children and highly-nervous females it is well to direct that they should pass water shortly before the operation, as they sometimes pass their water involuntarily. In the early stages of the operation I would strongly impress the necessity of quiet and abstinence on the part of the administrator and others from con-

version, as nothing is more disturbing to the patient (but a quiet reassuring word or two on the part of the administrator is of value). The patient should also be instructed how to breathe. I shall not enter into the *modus operandi* of the anæsthetic substances, nor take up your time with the method of administering the various agents, but I will briefly note what are the dangers with each of them and how they should be met. The first in order is nitrous oxide, which is *the* anæsthetic of dental practice. Here there is the danger, which is shared with the other anæsthetics, of foreign bodies, such as fragments of teeth or broken instruments, falling into the back of the mouth or larynx. Should this occur the finger must be swept round behind the base of the tongue, including in its circuit the offending body. Should this not prove effectual the tongue must not be pulled forward with the patient in the ordinary position, but he must be inverted, and then the tongue may be held forward by grasping the tip between the finger and thumb wrapped in a cloth, and the back violently slapped, or the patient must be told to breathe slowly and then give a loud cough; should both of these fail and should asphyxia seem imminent the administrator (be he doctor or dentist) is in duty bound to open the windpipe. This is best done, if he is inexperienced, by his feeling for the prominent ring just about one and a-half below the Adam's apple, and keeping the knife pretty close to the ring, plunging it in there. A piece of tubing such as an india rubber pipe should then be inserted, and the blood must be sucked out of the windpipe. This tube must not be moved till the arrival of a medical man. Small prop gags should be attached to a string. Another danger with gas is syncope, and deaths have been reported and put down to this cause, but in all these cases I think it will be found that the heart stopped either from fright or through the operator commencing before the anæsthesia was complete, or after consciousness had partly returned. The primary preventive in these cases is to ensure that the patient is really unconscious before commencing, and to cease operating before consciousness is recovered. Should syncope, however, occur, place the patient in the prone position, loosen all constricting clothing if this has not already been done, and apply a whiff or two of nitrite of amyl or smelling salts. The breathing *may* cease, and if it does not return in five or six seconds artificial respiration should be performed by kneeling in front of patient, and pressing up the ribs with the fingers spread out, and then

letting them go, and pressing the ends in, repeating this some fifteen or eighteen times per minute. Headache does not often follow "gas," except where it has been administered twice at a sitting, or air admitted with the gas.

With ether the main danger is to be looked for from the breathing stopping. This, fortunately, occurs some seconds before the heart ceases to beat, so that if artificial respiration is resorted to there is every chance of the breathing being restored. Artificial respiration in these cases is best done by the method which bears the name of Sylvester. The patient lying on his back with head raised, the arms are drawn up by the operator (who kneels behind the head) till they stretch themselves and so raise the ribs; this movement being ended, the arms must be pressed into the side. These manœuvres must be repeated not more than eighteen times per minute. It is only very rarely that the heart fails. The coughing which occurs at the beginning of inhalation is caused by the vapour being too strong at first for the mucous membrane. Vomiting should not occur with *ether*, unless a solid meal has been taken shortly before administration, or much blood has been swallowed. On the first signs of its occurring the administration should be pushed, as this generally averts the trouble. Should, however, the vomiting become uncontrollable, the administration must be stopped, all vomited matters removed with the fingers, and as soon as the mouth is quite clear the inhalation should be again pushed; be very careful, however, that no vomited matters are drawn into the larynx. The after-effects of ether are sometimes troublesome; they are nausea, vomiting, and hiccup. Sipping *hot water* will often remove these, but lukewarm water will increase them. Bromide of potassium gr. xx. will remove the headache, which is sometimes troublesome; so also will a cup of green tea. The patient should not leave the house for at least thirty minutes after complete recovery, as if he walks he will appear to be in a semi-drunken condition, which may excite notice.

With *chloroform* the main danger is syncope. For this reason a most careful watch should be kept on the pulse and face during the administration. On the first signs of this accident occurring, let the back of the chair be lowered till the head is lower than the body, and the legs at the same time be held up. This is, in my experience, the method of all others to be relied upon. This was first suggested in a strange way. Taking up by the tail a rat, on which experiments were being performed, and which was thought to

be dead, it came to life again, and rewarded the experimenter with a sharp bite on the finger. At the same time that the patient is inverted, artificial respiration by Sylvester's method should be kept up. Also slap the head and face with cold water. I have not seen much good follow the employment of electricity, which I am inclined to think makes matters worse; and nitrite of amyl has failed in my hands. Another accident which must be guarded against is the falling back of the tongue and epiglottis, preventing any access of air. This accident should be met by pushing the lower jaw forcibly forward by the thumb behind the angles, and at the same time letting the head fall back over the chair. Vomiting must be met in the same way as with ether. *Hysteria* I have found troublesome in highly-nervous persons, and with these the after-effects of chloroform may last some days; full doses of bromide of ammonium and valerianate of zinc I have found the best treatment.

Before passing on to the subject of local anæsthesia I wish to say that to my mind no man should attempt to give chloroform and operate without aid, as the patient requires constant care; at the same time I have found that by taking in how the operation is going on, and being ready to help by mopping out the mouth with small pieces of sponge held in a holder, I have been able to give considerable aid; the manipulation of the gag, which should be of the lever form, should also be in the hands of the anæsthetist. The operator should be guided as to when to operate and when to stop entirely by his anæsthetist.

Local Anæsthesia.—The only local anæsthetic whose action I shall discuss is cocaine. This body has been introduced into practice within the last seven or eight years. It is prepared from the erythroxyton coca, and is generally used in the form of a hydrochlorate; it has been extensively tried in dentistry, and has, I think, in safe quantities failed to come up to its early expectations; and here I would give a word of warning that it is by no means a safe drug. In the first place its action on various constitutions is not alike; what is to one person a safe quantity is by no means safe to another, and unfortunately we are not able to say beforehand what persons will be injuriously affected by it. To be of any use in deadening the pain of extraction it must be injected subcutaneously. Now there are various reasons against this method. In the first place, the quantity generally used (three injections of a 20 per cent. solution) *i.e.*, about three-quarters

to one grain, is unsafe. In the second the effect often fails to penetrate to the nerve, so that the extraction is not painless. In the third the three pricks of the needle and waiting for the drug to act render the patient anxious and nervous, and help to increase the shock of the operation. In the fourth only one tooth *should* be operated on on account of the quantity of cocaine which would have to be used ; and in the fifth, when we have a safe method such as nitrous oxide, we should not go out of our way to use an unsafe one. The one-sixth of a grain has produced most unpleasant symptoms, which are those mainly due to the heart and comprise a feeling of faintness, great pallor, giddiness, noises in the head and headache, palpitation and a sense of stifling, with cold sweats ; nausea and vomiting have also occurred. Should these symptoms occur the patient should at once be placed in the recumbent position, and having all constricting clothes loosened, smelling salts should be held to the nose, and brandy or sal volatile (one tea spoon) should be given, and a few whiffs of nitrite of amyl would be of use. The only conditions in dental surgery when cocaine would be safe and effectual are those in which the solution (20 per cent.) could be painted on the gum, *e.g.*, for scaling and removing tartar, and also where it could be used *topically*, as in cases of hyper-sensitive dentine, in preparing teeth for stopping ; but even here we have in carbolic acid and creosote good and safe substances to rely upon.

LEGAL INTELLIGENCE.

An Unregistered Dentist at Newport.

AT Newport County Police Court on Saturday, before Mr. D. WHITEHOUSE (in the Chair), and Dr. A. DAVIES, Moses Abel was charged with using the title of dentist, without being registered.

Mr. Melsheimer (of the Common Law Bar, London) appeared to prosecute.

Mr. MELSHEIMER said that in this case he was instructed by the British Dental Association to appear to prosecute the defendant for an infringement of the Dentists Act, 1878. The Association was a body of leading practitioners in the dentist profession, associated together for the purpose, among other things, of seeing that the

profession was conducted according to the rules. The Act 41st and 42nd Vic. chap. 33, which would be found on page 10 of the Dentists' Register, section 3, provided, that any person who took or used the title of dentist without being registered under the Act, was liable, on summary conviction, to a fine not exceeding £20. It was not competent for a person to use the title of dentist without being registered, although he might possibly be a skilful practitioner and capable of carrying out the duties of the profession. The question before them was not whether the man was a disgrace or an ornament to the profession. He mentioned this because sometimes in cases like the present the plea was set up that the man was a competent dentist, although he was not registered, but this did not palliate the offence. The Register was *prima facie* evidence, and he put this in. He then proceeded to call evidence.

Mr. THOMAS SMITH was sworn.

Mr. MELSHEIMER: Are you a clerk to Messrs. Bowman and Crawley-Boevey, 21, Bedford Row, London?

Yes.

Are they the solicitors to the British Dental Association?

They are.

On Thursday, the 27th of June last, did you call at the defendant's house, 3, Archibald Street, Maindee?

Yes.

Did you see the defendant?

Yes.

Did you have a conversation with him?

Yes.

What was it?

I asked him if his name was Moses Abel, and he said it was. I then shewed him this card and this circular, both bearing his name and the word "dentist." I asked him if the circular was his, and also if the card was his. He said they were.

Mr. MELSHEIMER at this point drew the attention of the Bench to the wording of the circular, which was headed "Please read this carefully." It also contained the name of "Moses Abel, surgical and mechanical dentist," and then followed reasons why the public should go to him in preference to other dentists. He handed one of the circulars to the magistrates, and mentioned that the card also contained the defendant's name and the word "dentist."

Mr. MELSHEIMER (to witness): Was there any further conversation between you?

I told him he was not entitled to use the word "dentist," and said, "You are infringing, by so doing, the Dentists Act, 1878." I told him that I supposed that he, of course, knew about that Act. He said, "Yes, I do." "You know about the Dentists' Register?" and he said, "Yes, I do." He also said, "My father

practised for many years as a dentist, although he was not registered, and I consider I am entitled to do the same." I then said, "You reckon you are a dentist?" He said, "Certainly, I do." He contended that many people practised without being registered, but I said that had nothing to do with it.

DEFENDANT : Did I say I knew all about the Act ?

WITNESS : You did not say you knew all about the Act.

DEFENDANT : Did I say I knew about the Act.

WITNESS : You said you knew about the Act.

DEFENDANT denied this.

Mr. MELSHEIMER explained that it would be found in the last paragraph of the 4th of the Act of 1878 that the prosecution could only be instituted with the consent of the General Council of Medical Education and Registration of the United Kingdom ; but under the Act of 1886 the prosecution could be instituted by a private person. He had nothing further to prove.

The CLERK (to defendant) : What have you to say in answer to the case ?

DEFENDANT said he had been in practice with his father since 1876, and in the early part of 1877 began to practise himself. In consequence of his father's financial misfortunes, they went to the States, and did not return until 1882. His father knew nothing at all about the Act, neither did he. That was all he had to say. He knew nothing whatever about the Act.

The CLERK enquired what penalty Mr. Melsheimer pressed for.

Mr. MELSHEIMER said he did not suggest anything, but would leave it to the Court. The object of the Association would be fulfilled if he was fined a substantial amount, so as to shew him that he could not call himself a dentist without being registered. The Bench might reduce the penalty to a nominal amount, but he would not suggest anything.

The CHAIRMAN announced that the case was clearly proved against the defendant, and he would be fined the small amount of £3, including costs. He advised defendant to get registered as soon as possible, or else he might be brought there again and a much heavier penalty imposed.

DEFENDANT applied for time to pay the money, as he had suffered heavy losses of late.

Mr. MELSHEIMER asked the Bench to specify the amount of the penalty and the amount of the costs, otherwise the penalty would go in the ordinary way. The costs of these prosecutions were not very light. The costs of collecting the evidence, as they had to come from London, were heavy. The Association had to bear the costs in the first place, and it was only right they should be recouped.

The Bench then decided to impose a penalty of £1 and £2 costs.

DEFENDANT stated that it was usual for the Dental Association to

first write and caution a person before taking proceedings. They did not do so in this case.

Mr. MELSHEIMER : I am as good an authority as the defendant. There is no evidence to shew that he was not cautioned.

DEFENDANT again applied for time to pay the fine.

The CLERK : Better find the money.

DEFENDANT : I will find it by Monday. I cannot pay it to-day ; this is my Sabbath Day.

Dr. DAVIES : Find it after six o'clock.

DEFENDANT : My Sabbath lasts until after ten o'clock.

Dr. DAVIES : Well, find it after dark.

Defendant then left the Court.



HOSPITAL REPORTS AND CASES IN PRACTICE.

Removable Bridgework.

By E. A. COUNCELL, L.D.S.Eng.,

HONORARY DENTAL SURGEON LIVERPOOL DENTAL HOSPITAL, LECTURER ON
DENTAL MECHANICS, UNIVERSITY COLLEGE, LIVERPOOL.

AT the recent meeting of the Midland Branch of the British Dental Association held in Liverpool, amongst other matters of interest brought before the notice of the members, bridgework formed an important item. At one of the demonstrations a piece of bridgework was inserted in the mouth, the bridge being non-removable. During the casual communications at the afternoon meeting, cases of bridgework, removable and otherwise, were handed round for the inspection and criticism of the members, among others, one, the chief feature of which was a gold bar (fixed at each end by means of a gold filling) which carried the teeth, the latter being fastened to the bar by a piece of springy gold, which was soldered by one end to it. When slightly separated from the bar, the saddle to which the teeth were attached was forcibly pushed over the bar, and thus kept in place. While admiring the principle of being able to remove the teeth from the bar, I was not satisfied with the mode by which that end was attained. Perhaps, if I give the details of the operation of a case I have recently inserted, it may more clearly explain the method I have adopted. Miss T—— had lost the first and second upper bicuspsids on the left side, and was anxious to have the lost teeth replaced, but was strongly averse to wearing a plate. On examin-

ing the mouth, I found the left upper canine had a large amalgam filling on the distal surface, and the molar an amalgam filling in the centre of the crown; the gum between these two teeth was healthy. At the first sitting I drilled out both these fillings, opening out the cavity in the molar to its anterior surface and the cervical edge, the pulp being unexposed in each. An impression of the upper and lower was then taken in godiva and the patient dismissed. A gold bar, about sixteen British plate gauge, was next made, the ends of which fitted into the cavities, and the intervening part accurately to the gum. Across the centre of this bar a small slot was filed. A gold saddle was next fitted to the bar and to the bite; this was made in two parts. A piece of gold, about eighteen British plate gauge, was bent to fit the side (lingual) and top of the bar , and a second piece of gold, not so thick, about twenty-three British plate gauge, being the side to which the teeth must afterward be soldered, was fitted to the outside of the bar, and soldered to the first bent part . This now accurately fitted the bar. Through the top of the saddle, directly over the slot before-mentioned, a hole was drilled, and a piece of gold wire, long enough to enter the slot, soldered to the saddle. This prevented any sliding of the saddle upon the bar. The teeth, two canines, were fitted to the gum, backed, invested and soldered; these had now to be soldered to the saddle. Bar and saddle were placed on the model, and the teeth secured to the latter with wax, lifted off, and the teeth and saddle invested and soldered. Two holes were drilled through the lingual side of the saddle and completely through the bar. These were tapped and the orifices in the saddle countersunk. Two gold screws were cut, the heads fitting the countersink. A screw-driver, for using in the mouth, can readily be made from an excavator. At the second visit from the patient I fixed the rubber dam, leaving it over the gum between the two teeth, to be operated upon. The canine was filled over floor, internal and external walls, and the molar over the floor, with gold. The bar, with the saddle screwed to it, was then fitted into its place, so that the teeth pressed firmly into the rubber covering the gum, and held in that position, whilst fossiline was thoroughly packed into the cavity of the molar to hold the bar. When quite set the saddle was unscrewed, and the gold filling in the canine finished. The fossiline was next drilled out, and the gold filling in the molar completed. The rubber was cut away and the saddle and teeth went perfectly into position, and were screwed up

tightly. The great object of the guide pin and slot is that you are absolutely sure of having the screw-holes of the saddle opposite those of the bar throughout the operation. The lingual side of the saddle should be of sufficient thickness to allow of giving a somewhat natural contour to the plate, and the upper portion is, of course, articulated to the bite. It is, perhaps, too much in these days to claim anything as original, but I certainly think for removable work (which must necessarily commend itself, as in the case of a fractured tooth), this plan will be found, in suitable cases, to answer the expectation of both operator and patient.

MINOR NOTICES AND CRITICAL ABSTRACTS.

OUR valued correspondent, Mr. John T. Brown-Mason, sends us the following interesting case, together with the subjoined letter from the medical man in attendance :—

The Singular Death at Okehampton.

THE INQUEST.

An inquiry was held by Mr. W. Burd, county coroner, at Okehampton yesterday, into the circumstances attending the death of Harriet Leach, a married woman, of Germansweek, who died on Saturday after undergoing a dental operation. Robert Leach, labourer, husband of the deceased, stated that his wife, forty-three years of age, on Saturday attended Okehampton market. She had been ailing for two years, but appeared well on Saturday. Caroline White stated that Mrs. Leach complained of giddiness, and witness helped her into the train at Ashbury. Shortly after three o'clock she went with the deceased to Mr. Burd's surgery to have a tooth extracted. Witness remained in the waiting-room while Mrs. Leach went inside with Mr. Burd. In a few minutes she was called in, and saw the deceased sitting in a chair, apparently faint and hysterical. Mr. Burd tried to rouse her, and applied a wet towel to her face. She, however, remained unconscious and was laid on the floor. Efforts were made to restore animation, but without success. There was nothing unusual in deceased's manner on Saturday, except that she was rather lively. Mr. George V. Burd, surgeon, deposed that Mrs. Leach came into his surgery on Saturday afternoon and requested him to take out a tooth, as she was suffering from neuralgia. He told her he

did not think it would relieve her neuralgia, but she still expressed a desire to have the tooth extracted, and he consented to do so. It was a small stump, which came out without difficulty. Deceased afterwards washed her mouth out with some water, and then became a little hysterical. Witness moistened her face with a wet towel, and suddenly her breathing stopped. With the assistance of Mrs. White he laid her on the floor. Deceased did not faint; her breathing simply stopped, although her heart continued to beat. Artificial respiration was resorted to and continued for eight hours. Death took place at half-past eleven o'clock. Except artificially, she did not breathe during the whole of the time which elapsed until her death. In his opinion she died from apoplexy. He had attended her for three or four years. She had always complained of neuralgia, headache, and giddiness, and at times could not keep her head up. One of the small blood vessels at the base of the brain was probably ruptured, causing pressure on the nervous centre, which stopped her breathing. Any slight shock might have produced the rupture. Mr. E. H. Young, surgeon, described the condition of the deceased when he was called in to assist at half-past five o'clock. She was quite unconscious, breathing had ceased, but the heart was still acting. Everything possible was done to restore animation. He concurred with Mr. Burd as to the cause of death, and added that the blood vessel might have been broken without any shock at all. The jury returned a verdict of "Death from natural causes."

Okehampton,

30th May, 1889.

DEAR SIR,—In reply to your letter of the 28th inst., the newspaper report is correct. The woman had suffered from severe headache for several years, and, in all probability, had an aneurism at the base of the brain which, of course, was not detected during life, the rupture of which caused the paralysis of the breath centre. I have no doubt, that very many cases of apoplexy are fatal in the same way, only that no medical man is present to perceive that the heart is still acting, and therefore, they die at once. Thanking you for your expression of sympathy,

I am,

Yours faithfully,

GEORGE V. B. BURD.

J. T. Browne-Mason, Esq.

Bromide of Ethyl as an Anæsthetic.

BROMIDE OF ETHYL, C_2H_5Br , which was recommended as an anæsthetic in dental practice by Herr Schneider, dentist to the German Emperor, at the Munich Odontological Congress held last year, has since that time been employed in a large number of cases by Dr. Friederich Herz, a dental surgeon in Vienna, who contributes an interesting paper on the subject to the *Internationale Klinische Rundschau* of April 14th. He uses a simple inhaler like that of Skinner, with some cotton-wool inserted to soak up the bromide of ethyl, of which he pours in about half an ounce at first, adding a little more afterwards, if required. In some cases less than seventy-five grains proved sufficient. Anæsthesia came on rapidly, usually in one or two minutes, and then was sufficient for from five to eight extractions. The patients took the bromide far better than chloroform or ether, neither struggling so much nor presenting any unpleasant symptoms after waking up. Some patients, who had previously suffered a good deal from ether, expressed themselves as highly delighted with the new drug. Dr. Herz has not tried the bromide on young children, but he thinks it will be found very suitable for them, in consequence of its not unpleasant taste and the simplicity of the apparatus required. How far bromide of ethyl would be applicable in important operations cannot as yet be stated. Blum, of Bamberg, however, repeated the inhalation at a single sitting, and was enabled to extract thirty-two very firmly set roots. It may be mentioned that, according to Lewin, bromide of ethyl does not induce paralysis of the heart.—*Lancet*.

ANNOTATIONS.

WE would call the attention of our readers to the fact that those Branches who wish to nominate Members for the Representative Board for election at the Annual Meeting, must place their nominations in the hands of the hon. sec. at least one month before the meeting.

It is hoped that no gentleman proposing to read a paper at the Annual Meeting will omit to notice the new rule, which requires that all papers must be in the hands of the hon. secretary, Mr. Morton Smale, *at least six weeks before the meeting*.

DURING the present International Exhibition at Paris, a good many international congresses will be held. One among these, not the least important we trust, will be an international dental congress, and we are pleased to learn that there Sir John Tomes is likely to occupy the post of President d'Honneur for Great Britain, while Mr. George Cunningham has accepted the post of Secretary for this country. The invitation will be issued in the name of the minister of commerce, the opening and closing meetings will be held at the Exhibition, the other meetings and clinics at the two dental schools, 57, Rue Rochechouart, and 3, Rue de l'Abbaye. The officers of the section will be as follows :—President, M. M. David ; Vice-President, M. Saussine, with whom M. Brasseur was to have collaborated, the much regretted death of the latter will necessitate a new choice but the name of his successor has not yet been made public ; General Secretary, M. Pourchet ; Secretaries, MM. Blogmann, Damain and Godon ; Treasurer, M. Kühn ; Committee, MM. Chanvin, Crignier, Dubois, Ducrac, Ducournan, Gaillaird, Marchardé, Papot, Poinot and Ronnet. The congress will open on September 1st, 1889. The subscription for residents in France will be 20fr. Applications for admission should be addressed to the General Secretary as early as possible. The congress will be divided into the following sections :—1. Anatomy and Physiology (normal and pathological). 2. Operative dentistry, including Therapeutics and Materia Medica. 3. Prosthetic Dentistry. 4. Education. The question to be discussed will be in part suggested by the Committee and may be made in French, English, German, Italian or Spanish. A time limit of fifteen minutes is assigned to each communication, the President having power to accord an extension of five minutes ; any further extension must be voted by the meeting. Each speaker will be allowed five minutes, the President having the option of allowing five extra minutes when he thinks proper to do so. No speaker will be allowed to occupy more than ten minutes of the time of the meeting without a special vote. Gentlemen who are desirous of taking part in any of the discussions are requested to inform the General Secretary of their intention in writing. Any communication published otherwise than by the authority of the congress during the space of three months after the meeting will appear only by title in the official record of the meeting. A large contingent of visitors from America is anticipated, and we trust

that the representatives of the mother country will be both many and influential, and will do their best to be a credit to the assembly. We would also wish to emphasise the fact that this congress cannot be understood by any reasonable being to infer any separation of the dental from the parent medical profession, similar international congresses being held in most of the special departments of medicine and surgery.

We are requested to state that "The American Dental Society of Europe will hold its Annual Session at 8, Boulevard des Capucins, Paris, on August 6th. Papers by Drs. Miller, Sachs, Bryan, Patton, Elliott, Chamberlain, Haskell, and Fay; and clinics by Drs. Bonwell and Mitchell." Dr. St. George Elliot, of 39, Upper Brook Street, is acting as Secretary.

We have much pleasure in announcing that on July 17th, Sir John Tomes is to receive the guests at a conversazione at the Dental Hospital of London, when a large gathering is expected to do him honour. Lord Kinnaird is to distribute the prizes to the successful students, and the evening is to conclude with an exhibition of Edison's Phonograph, and a Concert by the members of the Dental Hospital of London Musical Society.

We are requested by the hon. secretary of the microscopical section of the Exhibits Committee of the coming Annual Meeting to announce that the committee will esteem it a favour if microscopical slides to be exhibited at the Annual Meeting be forwarded to Mr. Douglas C. Caush, 63, Grand Parade, Brighton, not later than August 1st, in order that they may be classified and entry made of them, so that after the meeting they may be returned without confusion or loss of time, as it will be impossible for the hon. secretary to be responsible for specimens, brought on, or a day or two before, the meeting. It is desired to illustrate specially erosion, pulp calcification, tooth formation and exostosis. All care will be taken of the slides; competent attendants will be present the whole time of the exhibition, and the slides will be promptly returned as soon as the meeting is over.

The distribution of prizes in connection with the Edinburgh Dental School will take place on Monday, the 22nd inst.

STATEMENT of operations performed at the Dental Hospital of London, Leicester Square, during June.

Extractions :

Adults	...	...	...	...	874
Under 14	...	...	...	...	426
Gas	...	...	...	...	1001

Fillings :

Gold	...	...	...	...	307
Plastic	...	...	...	...	1039
Advice	...	...	...	...	161
Irregularities	...	...	...	...	60
Dressings, Scalings, and Pivots	...	...	...	...	221

Total ... 4089

J. PERCY SMITH,
T. CONSTANT,
A. HOPEWELL SMITH, } *House Surgeons.*

STATEMENT of operations performed at the National Dental Hospital during May.

Number of patients attended ... 2754

Extractions :

Children under 14	...	...	...	329
Adults	...	...	...	519
Under Nitrous Oxide	...	...	...	958
Gold Stoppings	...	...	...	211
Other Stoppings	...	...	...	499
Advice and Scaling	...	...	...	394
Irregularities of the teeth	...	...	...	102
Miscellaneous	...	...	...	139

Total ... 3151

E. C. FISK,
G. W. KEEVIL, } *House Surgeons*

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our Correspondents.

The Back Door.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—There is a remark in your June editorial, which I should much like to see confirmed. You say "The Medical Council do not entertain applications for registration under Clause 37 which are not accompanied by a certificate of birth and a copy of the articles of apprenticeship, in addition to the statutory declarations."

May I ask, Sir, when this common-sense regulation came into force? and also whether any official announcement has been made to this effect? I have looked through the report of the General Meeting of the Medical Council in the *Lancet*, and also through your own report of the dental business, but I find no reference to any such regulation.

The dire necessity for some restrictions beyond a mere statutory declaration will be apparent from the following facts:—

(a) One of the recent cases of registration under Clause 37 has been investigated. It was suspected that the age of the individual, if correctly ascertained, would sufficiently establish the irregularity of the registration; whereupon an effort was made to obtain a certificate of birth, first of all, in the locality where the individual is believed to have been born. This failed.

Afterwards, application was made to the Registrar-General; but no such person can be found! The gentleman who has conducted these enquiries is a patient and persevering investigator, and he has come to the conclusion that the name admitted to the Dentists' Register is an assumed name!

(b) Another recent case is that of an individual about whom those who know him well (a relative of his among the rest) declare that "he knew nothing whatever of dentistry five or six years ago." It would appear that moral evidence is abundant in this case.

It is a singular fact that so many of these registrations under Clause 37 come from a class whose antecedents are shrouded in uncertainty. The two referred to, however, bear a typical relation to the restrictions mentioned by the writer of your editorial. The requirement of a certificate of birth, would, in all probability, have barred the first, while the demand for the production of a *bona-fide indenture* of apprenticeship—duly stamped—would certainly have stopped the second.

For the credit of the Medical Council, as well as in the interest of the public, and of the dental profession, your readers will, I am sure, be delighted to find that the Medical Council have adopted the reasonable restrictions of a certificate of birth, and the further re-

quirement—not of a “copy,” but of a sight at least of the *actual stamped indenture* of apprenticeship, in all future cases under Clause 37. Our only desire in discussing this question at the Midland meeting was to urge the adoption of such regulations as would guard the Dentists’ Register against fraud.

I am, dear sir,

Yours very truly,

W. E. HARDING.

Shrewsbury.

[The remark which our correspondent desires to see confirmed was made on the authority of the President and the Registrar of the General Medical Council.]

The Midland Branch.

TO THE EDITOR OF THE “JOURNAL OF THE BRITISH DENTAL ASSOCIATION.”

SIR,—I am in no way officially connected with the Association, and am not in its secrets, and I am, therefore, very much astonished to learn from a letter signed E. J. L. in the Journal of this month that in the Midland Counties Branch “much dissatisfaction exists,” and that “the day is not far distant when they shall be compelled to break away from the Parent Society.” I further gather that the dissatisfaction in some measure arises from the fact that “Dr. Waite’s services to the whole profession” remain unrequited. I am the more astonished to read E. J. L.’s letter, inasmuch as after careful perusal of the proceedings of the meeting of the Branch, reported in the same Journal, I cannot find the expression of a single word bearing upon the subject of grievances or dissatisfaction. It is a pity E. J. L. has not clearly told us what the grievances are; and it is to be hoped he will do so at once. One thing seems very evident, namely, that the Association, as it stands, is not powerful enough, with all its members united, to carry out much-needed reforms; and unless we are, in this case, to believe that the part is greater than the whole it is difficult to understand how a single Branch can hope to achieve what the whole body fails to do. Moreover, the Representative Board is freely elected by the whole Association, and members have it in their own power to remove any cause of dissatisfaction which exists. With regard to requital of services rendered to the Association or profession, I should be sorry to insult Dr. Waite by imagining that he for one moment ever looked for return for the services he may have rendered. He is only one of the many who have made some sacrifice to promote the objects which we all hope to see fully realised. Those who have worked for these objects have neither sought nor asked for requital or thanks; they have been content with the feeling of satisfaction which sacrifice in a good work surely yields. It will be a bad day for the Association when any other spirit influences its members.

It seems to me indeed that the Association is called upon to challenge E. J. L. to formulate and express the grievances to which he so distantly alludes. Does he allege that the complaints have been laid before the Representative Board and have been disregarded? If that is so he is bound to bring them before the Annual Meeting. The Association has full control over its own affairs, and nothing of consequence can be done or left undone without the cognisance and consent of the majority of members. The majority have not heard of the abuses hinted at; let us hear what they are, and they will certainly be amended.

If any grievance is found in the fact that the Dentists Act does not give the profession absolute protection against unqualified practitioners, and that other small flaws exist in it, such grievances can only exist in the minds of those who do not know what were the obstacles to the introduction and passing of the Bill; who are ignorant of the feeling influencing powerful sections of the House of Commons as to legislation of the kind; who have never ascertained the concessions to conciliate this feeling, which were absolutely called for to secure success, and who really will not learn what has been over and over again pointed out in your columns, namely, that we dentists, so far as protection goes, are much better off than the rest of the medical profession. No one who is conversant with medical legislation can expect that the Legislature will again interfere in dental affairs. It is possible, although it seems extremely improbable, that some changes in general medical law may in time be made which will prevent the assumption of false medical and surgical titles by unqualified practitioners—changes which might tend to further hamper the dental quack, and prevent him, for instance, from styling himself “Dr.,” as he is now so fond of doing; but I venture to express the opinion—based upon knowledge—that beyond this we must not look. There is, no doubt, much to be done in many ways, although we are getting on rapidly. We, however, need more than all to demonstrate more widely that there exists a *dental profession*, a body—a growing body—of gentlemen devoted to the practice of dentistry, who, from their personal qualifications, their general culture and scientific attainments, are working to take the place they claim as an integral portion of the great medical profession. Is it not something to be proud of that now-a-days full acknowledgment of this fact can be publicly made by a distinguished body of medical guests such as the Midland Counties Branch have just had the honour of entertaining.

Your obedient servant,

June 19th, 1889.

AN OBSCURE MEMBER.

Dental Education.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,— I have been much interested in reading the various letters that have appeared in your columns on the question of Dental Education. I am heartily in sympathy with those who advocate high qualifications, and it is to the moral effect of a high standard of education that we must look to for the general advancement of the Dental profession. The man who respects his profession sufficiently to take the highest degree that lies in his power will be a self-respecting conscientious practitioner, and will consequently earn the respect of his patients on the one hand, and on the other do his share towards earning the respect of the public for the profession at large. What we want are men who will refuse to be enslaved by the petty commercial spirit which is, at the present time, only too common in our ranks. What is right for a tradesman is frequently wrong for a professional man, and the consideration of what "pays best" must be replaced by the consideration of what is best for the patient. A professional man must be paid for his services, but his services must be given conscientiously, and then an adequate fee demanded. I am acquainted with dentists of skill and ability who have informed me that they never attempt to cure an alveolar abscess or treat and fill the roots of teeth because their patients do not appreciate such work, and are consequently unwilling to pay for it; their practice in these cases being to extract at once, and, if necessary, insert artificial substitutes. How on earth are the public to appreciate complicated conservative operations if they are not persisted in, and reasonable fees demanded? Mr. Cunningham very clearly showed in an article published last year in your Journal that the "pulling-out and putting-in" system was far more expensive to a patient in the long run; and, consequently, the excuse offered of consideration for the patient's pocket falls to the ground, and we are left with the not too pleasant reflection that this practice is followed for the purpose of gain by pandering to the ignorance of the public. It must not be understood that I am attacking the profession at large, but there are numbers whose practice in this respect is far from perfect, and we want, by high qualifications, to make this number small and beautifully less. There is another aspect of the educational question which I think demands attention, and that is the system of the three years' mechanical pupilage. At the present time there is no guarantee that a pupil will receive adequate instruction. A practitioner may be so engaged in his operating room that his pupil is left entirely to the care of the mechanical assistant, who has no interest in giving instruction, or even if he is willing, may not possess the teaching faculty. Three years is a short time in which to get a good grasp of mechanical dentistry, and consequently every facility should be placed in the way of a pupil

acquiring skill and knowledge. I think if an examination in mechanical dentistry was required before a student could commence his studies at a Dental Hospital, or at any rate before he could take his degree, that it would make parents inquire more closely into the teaching capacities of the dentists to whom they might send their sons, and dentists more careful to advise parents to choose some other career for sons who were either incapable or unwilling to do their instructors justice.

I am, yours faithfully,

WM. C. GRAYSTON.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—I am sorry that Mr. Smale should feel unable to accept my apology: for that is the only construction I can put upon his letter in view of the fact that, besides a personal assurance of regret and an intimation that I should write to the June number of the Journal to explain and probably withdraw altogether the passage he complained of—I sent him, more than a fortnight before that number appeared, a draft of the letter I proposed to publish, and which (with a few alterations, made for the most part in deference to his wish) actually appeared in that issue. As, however, I do not well see in what way I can add to that apology, and as I venture to hope that it will have been received with more generous consideration by the Staff of the Dental Hospital of London than it has been, apparently, by the Dean, I need not, I think, trespass further on your space with matters of merely personal reference, but may pass at once to consider the points in my first letter noticed by "A Member of the B.D.A."

He argues that I am wrong in my opinion that the proposed change would be likely to restrict the number of men entering the profession on the ground that the number of dental students is constantly and steadily increasing. But that statement, though perfectly correct in itself, is, I submit, irrelevant. The question is whether there are not some students working for the dental licence who succeed in passing the examination only at their second or third attempt, and who would be entirely debarred from it under the proposed scheme, owing to their inability to pass the admittedly much more severe examination in anatomy and physiology. The number of such men among dental students is, I have no doubt, small, but I certainly think that there are, or may at any time be some; and that in, say ten years, they might amount to no very inconsiderable number. Now these men, though doubtless falling far short of the qualities possessed by an ideal dentist, would yet, I take it, be much more efficient professional advisers than the multitude of quacks who are at present

defrauding the public of their money; and as the adoption of an altered scheme would prevent their becoming dental practitioners, I think on this ground, as well as on others, that the proposed change would be unwise.

From what he says with regard to general medical study, I gather that "A Member" does not quite understand the position I hold, evidently from my having failed to make myself sufficiently clear. I do not certainly wish to deprecate the increased study of general medical subjects *in itself*—provided always that it be optional. On the contrary, I consider the knowledge of such subjects to be in many respects of great advantage to a dental practitioner. But, in common with many others, I do protest against increasing the range or extent of study in these subjects to the partial neglect of the practical dentistry whereby alone a dentist can be of direct professional service to the public, and by which he is to earn his living. And in view of the fact, which I pointed out in my first letter, viz., that there are at present points of more or less every day work in which dental students are either only instructed casually, or not instructed at all, I intend that (assuming the necessity of a mechanical pupilage) any scheme which would diminish in the least the present amount of practical work stands thereby self-condemned, as inefficient for the thorough training of a practical dentist. How then does the proposal of the *British Medical Journal* answer to this test? In the first place it would shorten the three years' mechanical work by six months. This would seem to be a direct and decided loss, for "it is impossible to over-rate this mechanical training, and three years is not a day too long to spend in a workshop, to learn and master the many minutiae of the mechanical art, without a thorough familiarity with which it is impossible to be a good dentist" ("Dental Education," by Mr. Smale; Transactions, Annual Meeting British Dental Association, 1886). Yet this loss is apparently necessitated in order to make the whole scheme possible (v. *British Medical Journal* Article), and the six months so obtained are to be added to the dental and general hospital practice, in order to afford time for the study of the anatomy and physiology. Now, omitting all consideration of the weighty, and to my mind conclusive, objection, so forcibly presented in the leading article of your December issue, it may be more reasonably questioned whether this time would be enough for acquiring this knowledge. Indeed, when one considers the difference, both in range and standard in these subjects between the two examinations, a difference sufficiently well indicated by the fact that the dental student has to take in one examination, not only anatomy and physiology, but also surgery, dental anatomy and dental surgery, and in the other is re-examined in all; while the medical student, taking anatomy and physiology, is only examined again in the subject in which he is unsuccessful—one is almost driven to the conclusion that

sition in this time of the extra knowledge would *not* be possible in an *average* dental student. And it cannot be too forcibly insisted that it is the average and not the brilliant man who is to be considered in framing any curriculum which is to be compulsory. Where, then, is the additional time to be found? It cannot be taken from the dissecting-room, for dissections are to be increased. It cannot be taken from ward work, for by many, if not the majority of dental students, little or no ward work is done. It cannot be taken from the dental out-patient department, for here "the attendance of the dental student is very often nil."* But it can, apparently, be taken from the dental hospital, and therefore the work there would be lessened.

It may, however, be objected that although this perhaps looks plausible enough on paper, yet the difficulties are not really so great as they appear; that as a matter of fact, all the necessary work is done in two years by some ardent students, and that with a little more time allowed, there seems no reason to suppose that it could be done by all. Yes; but my contention is that when so done, even by brilliant men, it is *at the cost of the practical work at the dental hospital*, which is thereby reduced considerably.

It is difficult, then, to resist the conclusion that although under the proposed scheme the time at the dental hospital would be expanded from two years to two years and a-half, yet the actual amount of work done there would be less than it is at present; and that, in fine, the whole course of practical training—mechanical and operative—would be seriously curtailed, and therefore weakened. Surely those who can contemplate such a result with equanimity must be either optimistic in their estimate of the mechanical aptitude of present dental students, very sanguine as to the mechanical genius of future dental students, or very indifferent to the practical ability of the present generation of English dentists.

Yours faithfully,

GEORGE G. CAMPION.

Manchester.

Abandonment of the Museum at Brighton.

THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—Owing to the very feeble response to the circulars and notices issued by the Museum Committee, on the part of the Members of the Association, the Executive Committee (on the recommendation of the above Committee) have resolved to *abandon the Museum for the present year*. The Museum Committee has been changed to the Finance Committee, who will make the necessary arrangements for the following sections, viz. :—

* Calendar, Dental Hospital of London, 1888-9, p. 8.

1. Microscopy.
2. Anæsthesia (apparatus, ancient and modern).
3. Operative Dental Surgery (crowns and crowning).
4. Manufacturers (including Literature).

Believe me, yours respectfully,
Brighton, June 28th, 1889. WALTER HARRISON.

The Annual Meeting.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—As a member of the British Dental Association, I hope to attend the Annual Meeting at Brighton, and at the same time shall be happy to offer myself as a patient to any gentleman giving demonstrations in filling teeth. I am not aware whether there is any difficulty in obtaining patients at the Meetings; in the event of such being the case should any member think fit to correspond with me, I am at his service.

Yours faithfully,
 LEONARD FAGGE.

Woodville, Fulham Road, S.W.

APPOINTMENTS.

S. EDWARD PEDLEY, M.R.C.S., L.R.C.P., L.D.S., has been appointed anæsthetist to the National Dental Hospital, *vice* J. F. W. Silk, M.D.Lond., resigned.

THOMAS JACKSON Jun., L.D.S., has been appointed Honorary Dental Surgeon to the Victoria Hospital of Burnley (Lancashire). There has been no previous appointment.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

Subscriptions to the Treasurer, 40, Leicester Square.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE.—All communications intended for the Editor should be sent to him at 11, Bedford Square, W.C.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

AUGUST 15, 1889.

VOL. X.

The Annual Meeting.

programme of the approaching meeting at Brighton now before us, and we think more than justifies the high expectations expressed in our last number. Firstly, the freedom accorded to the local executive of the stamp of the locality being placed on the character of the meeting, and we believe that in refinement and intelligent management and scientific interest the Brighton event will be found equal to any of its predecessors. In its social aspect it will amply make up for the absence of local objects of interest, by concentrating all the most enjoyable in one locality immediately within the reach of everyone, and we believe on good authority that our young friends will be afforded an opportunity of "demonstrating" with their feet to the inspiring dance of the celebrated Brighton band.

The list of papers is a formidable one, full of interest to

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and to those who are anxious to reduce the ris-
sufferings of humanity to the minimum, of super-
portance. We trust that nothing will be allowed to
venue to arrest the delivery, or mar the discussion, of
valuable set of papers as those on anæsthetics—for
be that their influence may extend far beyond the c
of dental surgery, and once more make the whole v
factor to our profession.

Our veteran President, Mr. Corbett, of Dublin,
believe, intimated his inability to be present. It th
finds us additional pleasure to see that our Pr
and stands to take part in some of the proceeding
the while we think we may look forward to a r
the few drawbacks as are usually encountered
the session.

THE NATURAL HISTORY COLLECTION, BRITISH MUSEUM

It is not that much is demanded of the modern
student in the examinations that preface his career,
but that the ordeal and serious ordeal in which h
is met by the public and his professional b
the foundation stone of his career is being
the frontiers are daily extending the dom
of knowledge in every direction, and the s
of any good in his generation must keep
the pace. But if, on the one hand
so much is given, and in resp
the lines of the modern stud
are laid in pleasant places. We
the many collections of great exc
but the collection at Cromwell
labour of love on the part o
the friend of the student of n

ce, Professor Flower, is in progress of creating, is by the most beautifully conceived of any that we have had opportunity of examining, and, in our own department, of odontology, what has already been completed is better than all that we ever dreamed of seeing in the perfection of its arrangement.

Immediately on entering the museum the visitor finds himself in a lofty and spacious hall on either side of which is a series of alcoves. In each of these recesses there is a display case, while the three sides of the space are occupied by alcove cases. Professor Flower's scheme has been to work on a single subject from an educational point of view in each alcove. Thus while odontology occupies one and the study of hearing another, the osteology of reptiles and that of fishes each respectively have an alcove devoted to them. In connection with the odontological section we specially have to mention the present article, and anyone whose business it may be either to teach or to learn dental anatomy will be greatly interested to see how far ocular demonstration can be carried in their special branch of science. Not only has a judicious selection rendered it possible in the comparatively small space to exhibit typical instances of all the principal and most interesting dentitions, but where the various stages of development are better exposed by the preparation of specimens have been prepared in section; the arrangement of the plates in the compound tooth of the gymnodont fish is rendered specially clear in this manner. Again, the structure of the tooth has some particular point of microscopical interest, and the most beautifully prepared diagrams are affixed; thus the structure of the mandible of *Pristis* and *Myliobates* are shown, and they appear under about a $\frac{2}{3}$ in. power, and this simple method of placing the peculiar looking tooth in juxtaposition with its histological structure simplifies the study of the subject, while at the same time it gives it a living

interest. The various varieties of hinge attachment found amongst the teleostei are illustrated by excellent drawings and still more excellent little models. Even the hopelessly dry subject of dental formulæ is enlivened by the manner in which it is presented.

It is not too much to say that such a collection may easily transform that which is commonly regarded as the dreariest department of the work of a dental student into the most interesting.

The catalogues are in themselves clear and concise handbooks compiled by the best men of the day and lavishly illustrated. That on the Mammalia compiled by Professor Günther, assisted by Mr. Oldfield Thomas and Professor Flower who is responsible for the cetaceous section, consists of 130 pp., with 57 woodcuts, and has already reached its third edition. That on Geology and Palæontology about the same size, by Mr. Henry Woodward, has reached its fifth edition (the first three included 11,234 copies), while the "Fishes," from the same pen, is much smaller (50 pp.), but has over 80 illustrations, and is of special interest to the dental student. These really valuable books are offered for sale at the absurd price of fourpence apiece, a fact which of itself abundantly illustrates the spirit in which the whole system is being carried out.

No doubt many of our readers will be visiting London this autumn, and for those who do, a pilgrimage to Cromwell Road cannot fail to be amply repaid by an inspection of what may fairly be called the finest educational exhibition in the world.

ASSOCIATION INTELLIGENCE.

The Annual General Meeting.

Annual General Meeting of the British Dental Association will be held in the Royal Pavilion, Brighton, on Thursday, Friday, and Saturday, August 22nd, 23rd and 24th, 1889. The following will be the order of proceedings :—

Wednesday, August 21st.

10 a.m.—Reception by the President-Elect, S. LEE RYMER, Esq., in the Royal Pavilion, to be followed by a Chamber Concert, consisting of Instrumental and Vocal Items.

Thursday, August 22nd.

10 a.m.—Meeting of the Representative Board.
10 a.m.—The Annual Meeting for business (open to Members only). *At the termination of the Association business the doors will be open to Visitors.* Mr. DANIEL CORBETT will deliver his valedictory address.
S. LEE RYMER will take the Chair and deliver an Address.

LIST OF PAPERS PROMISED.

"The Use of Ether as an Anæsthetic in Dental Operations," by R. CRUISE, M.D., Dublin.
"Chloroform," by BOWMAN MACLEOD, L.D.S., Scotland.
"Recent Researches upon Nitrous Oxide Narcosis and their application upon the practical question when and how should Laughs be administered," by DUDLEY WILMOT BUXTON, M.D., London, M.R.C.P.Lond.
"Certain Anæsthetic Mixtures, with special reference to their use in Dental Surgery," by FREDERIC HEWITT, M.D., Cantab.
It is hoped an interesting and valuable discussion will follow.
"The Comparison of the Teeth of Tertiary Mammals with those of the Present Day," by JOHN HUMPHREYS, L.D.S.I.
"Vulcanite Work," by J. H. REINHARDT, L.D.S.I.
"Dental Implantation," second paper, by GEORGE CUNNINGHAM, Cantab., L.D.S.Eng., D.M.D.
"Iodoform, its action and uses in Dental Surgery," by R. PEDLEY, F.R.C.S.Edin., M.R.C.S., L.D.S.
1 p.m.—Luncheon in the Banqueting Room.

2 p.m.—Demonstration on “Microscopic Section Cutting,” by D. CAUSH, L.D.S.I.

2.30 p.m.—Reading and Discussion of Papers.

5 p.m.—Afternoon Tea will be served in the Banqueting Room for Members and Ladies accompanying them. Promenade in grounds.

5.30 p.m.—Special Business Committee. The Hon. Secretaries of Branches are particularly requested to be present.

8 p.m.—Garden Party and Soirée. Military Band in grounds which will be illuminated. Concert, &c. in rooms.

Friday, August 23rd.

9 a.m.—Meeting of Benevolent Fund.

10 a.m.—Reading and Discussion of Papers resumed.

1 p.m.—Luncheon in the Banqueting Room.

2 p.m.—Demonstration on “Microscopic Section Cutting,” by D. CAUSH, L.D.S.I.

2.30 p.m.—Business resumed.

5 p.m.—Afternoon Tea.

7 p.m.—Annual Dinner at the Pavilion.

Dinner Tickets, 21/-, without wine 15/-, to be obtained of H. Redman, Esq., 61, Old Steine, Brighton.

Saturday, August 24th.

9 a.m.—At the Dental Hospital, Queen's Road—Dr. HEWITT will demonstrate the value of the mixture Nitrous Oxide and Oxygen. Dr. BONWILL the value of Rapid Respiration for painless Extraction. Mr. GEORGE BRUNTON will demonstrate the advantages of the Extended or “Howard” method of operating.

9.30 a.m.—The Demonstrations, Mechanical and Operative will be given in the Pavilion.

LIST OF DEMONSTRATIONS PROMISED.

“Gold Filling” (soft and hard), by C. F. RILOT, M.R.C.S. L.R.C.P., L.D.S.

Ditto, by T. MANSELL, L.D.S.

Ditto, by L. MAXWELL, L.D.S.I., D.M.D.

Ditto (William's Crystalloid), by W. HARRISON, L.D.S., D.M.D.

Ditto (Contour), by R. E. WOOD, L.D.S.

“Amalgam Filling,” by J. J. ANDREW, L.D.S.

Root Filling," by C. B. STONER, L.D.S.Glas.

Porcelain Crowns and Fillings," by W. HERN, M.R.C.S.

S.

A Piece of Bridge Work," by CLAUDE ROGERS, M.R.C.S.,
S., D.M.D.

Bridge Work," by J. H. GARTRELL.

The Use of Smooth Oval Pointed Pluggers in both the
Electric and Mechanical Mallets in Packing Abbey's Non-
sive, as well as any Adhesive or Cohesive Gold Foil," by
CONWILL, Philadelphia, M.D., D.D.S.

A. HAYMAN, L.D.S., will show a case of artificial restoration
of face.

p.m.—Luncheon in the Banqueting Room.

p.m.—The Branch invites the members and friends to an
excursion, by steamer, into the Channel.

SPECIAL NOTICES.

reduction can be made in railway fares.

Members attending the Meeting are requested to sign their names in the
book provided for that purpose, at the entrance to the Pavilion. Subscribers to
the Benevolent Fund and others are requested to attend the Annual Meeting
of the Benevolent Fund.

MORTON SMALE, *Hon. Sec.*

FOLLOWING LIST OF HOTELS THAT CAN BE RECOMMENDED,
IT IS HOPED, MEET THE REQUIREMENTS OF ALL
MEMBERS:—

Private Apartments can be obtained if desired.

Hotels.—"Grand Hotel." Members will be received on the same terms
as those accorded to the Members of the British Medical Association when
they visit Brighton. Full board, 10s. 6d. per day; partial, 7s. 6d.
"Clarence Hotel," bed, breakfast, and attendance, 8s. 6d.; "Clarence
Hotel," bed, breakfast, and attendance, 6s. 6d.; "Emery's Temperance
Hotel," bed, breakfast, and attendance, 4s. 6d.; "Gloucester Hotel," full
board, 9s. per day; "Harrison's Hotel," bed, breakfast, and attendance,
4s. 6d.; "Livingstone Hotel" (Temperance), 14, Old Steine, bed, breakfast,
and attendance, 4s. 9d.; "New Ship Hotel," bed, breakfast, and atten-
dance, from 6s.; "Old Ship Hotel," bed, breakfast, and attendance, from
6s.; "Royal Albion Hotel," full board, 12s. per day.

It is intended that the "Grand Hotel" shall be made, as far as possible, the
"Head Quarters" of the Association, and that Hotel will place at the disposal
of Members a common room for the purposes of social intercourse, &c.

Midland Counties Branch.

(Continued from page 397.)

DISCUSSION ON DR. MORGAN'S PAPER: (See page 422.)

Dr. BRIGGS said he had had a very slight experience of cocaine. The diversity of opinion on the part of previous speakers had striking features. Leakage and other errors in the barrel or needle of the syringe might account for this variation, which would obviously be slighter with weak than with strong solutions. On the subject of general anæsthetics, he could speak with greater confidence, having officially for five years been responsible for the giving of anæsthetics at the Liverpool Royal Infirmary—one of the largest of our provincial hospitals and teaching schools. He desired, however, to confess that it was only after a fairly long association with the gentlemen who were conducting the leading dental practices in Liverpool that he acquired the familiarity with what the dentist and his patient wanted. The quicker the process of anæsthesia, the less the inconvenience attending it, and the better for all concerned. For instance, the slowly induced anæsthesia of the administrator who had seldom, if ever, given ether, and was afraid to give chloroform in the erect, or semi-erect positions, must be familiar to most of them. The patient looked about criticising the scene in which the intending operator impatiently figured; and finally the process was complete by detention of the patient, by intoxication, in the dentist's house for the greater part of the day. Surely these were inconveniences even if exaggerated, which went to make nitrous oxide *the dental anæsthetic*. Even nitrous oxide bore a bad reputation, but, properly used by a competent person, its employment was unquestionably most satisfactory. It might be repeated frequently, and, without any form of the combined apparatus for nitrous oxide and ether, any one of the common forms of closed ether inhalers might be quickly placed over the patient's face, and ether anæsthesia induced before inconvenience from the nitrous oxide or unpleasant consciousness returned. This was important, for a simple apparatus was less alarming to the patient than a complicated one, and was less open to error, either in its management or its mechanics. Nitrous oxide was a safe anæsthetic. The reputation of nitrous oxide rested now upon the shoulders of the men who used it rather than of those who manufactured and supplied it. In giving chloroform and ether, choice should rest with the

administrator ; but, once fairly complete or total anæsthesia had been induced with chloroform, it was usually advisable to continue with ether. To begin with chloroform and go on with ether was now the most common practice. He had himself verified the observation that the more quickly anæsthesia could be induced the better ; less of the anæsthetic was used, and the recovery was more rapid. Speed must always be studied, and there must be close observance of the complexion, respiration, and circulation. Struggling should always be a contra-indication for going on the anæsthetic ; respiration was already embarrassed, and the circulation might unexpectedly fail. A dentist should not put the patient in the erect sitting position if he wanted it ; he rather directed the blood out of the mouth anteriorly, with his fingers, specially when operating on the lower jaw. Any extreme rigour in the preparation of the patient was irksome, and, with the exception of a loaded stomach, the dentist seldom needed to guard against anything but tight lacing.

Dr. MORGAN said he found it very embarrassing when people would say and said they must have this or that, instead of leaving it to the administrator. His preference was always to begin with chloroform and go on with ether. He had found that method the most rapid, and everything went on well. He had been very much interested in hearing the remarks of the various speakers. At the same time, he still believed a word of warning ought to be given ; he still thought cocaine was a dangerous drug. The best thanks of the meeting having been voted by acclamation to the readers of papers, and to the gentlemen who had given demonstrations, the proceedings terminated.

CASUAL COMMUNICATIONS.

Dr. EDWARD J. M. PHILLIPS showed specimens illustrating some of the abnormalities in arrangement, shape, position, &c., of the teeth ; also some actual specimens of pathological conditions of the teeth. Amongst the former were models showing the separation of the front teeth, from the gagging of the front teeth by two or more molars ; models of series of cases of overhanging bite ; also models illustrating different forms of irregularity in position ; one case in which the right upper central was in the middle line of the palate, and another from a patient twenty-four, who had been operated on when a few months

old for double harelip, where both upper centrals were erupted in the centre of the middle line of the palate; a few cases of super-added teeth, the additional ones being arranged generally in the dental arch, and exactly conforming to normal type. The next series included irregularities in number, too many or too few, the most interesting being a cast of the mouth, patient æt. twenty-five years, who had only had the upper and lower first and second molars and the upper central incisors. These incisors were the only teeth of replacement, the gum in the front of the mouth having an infantile appearance. Amongst the odd cases there was a cast of a boy's mouth showing the type of teeth sometimes met with in congenital syphilis or Hutchinson's teeth. The specimens of abnormalities included many teeth with twisted or otherwise irregular roots. The pathological specimens included three out of the four varieties of odontomes, as described by Mr. Salter, viz.: Warty teeth, enamel nodule of fang, and a large radicular odontome, given by Professor Rushton Parker. There were specimens of salivary calculus—one very large and attached to the first upper molar; it had caused ulceration and induration of the cheek. Also specimens of deposits of secondary dentine in the pulps of teeth—a common cause of neuralgia—and probably resulting from chronic irritation of the pulp dependent upon caries. There were other specimens of teeth attacked by erosion; others worn by attrition, many with exostosed roots, &c.

The PRESIDENT said special interest attached to the lower wisdom teeth enclosing the inferior dental nerve. Erosion was one of those mysterious processes which had never been satisfactorily explained, but the specimens shown were very good illustrations of it.

Mr. W. E. HARDING said that through the kindness of Mr. Gartrell, of Penzance, he had the pleasure of showing the members that gentleman's latest improvements in "movable bridge work." The greatest objection to bridge work was its immovability when once fixed in the mouth; and this difficulty Mr. Gartrell had overcome by his most ingenious invention. Mr. Gartrell's arrangement consisted of a flat gold bar attached to teeth or roots by caps, or pins, or other anchorages. On the side of this bar was a flat gold spring, which would be seen on the models he passed round. The bar being fixed in the mouth, he took an impression with it in position, and then made the bridge to this model, which it must fit most accurately. He bent a

of thin platinum to fit the bar, and on this built the bridge, either in gold on the Knap method or in continuous gum work. This was equally applicable to a single tooth or a full upper. Mr. Gartrell's latest improvement was to attach the bar to roots by screws. He tapped the roots, and before putting in the screws coated the roots with gutta percha in chloroform; there was no doubt that this was a long step in advance of anything that had hitherto been brought before the profession, and he thought their thanks were due to Mr. Gartrell for the true professional spirit he had shown in giving his invention to the profession.

The PRESIDENT said the cases which Mr. Harding had been good enough to exhibit to them were extremely interesting and valuable in their construction. These cases were of great value, but their application must always be limited. He had himself a case of the kind he would hand round. It was a piece of work done in Chicago. It was attached by a gold plate over the remains of a maxillary cusp, and there were attachments in various ways to a canine, lateral and a central. When he first saw the piece, it was taken over the central incisor, and the piece was hanging in the mouth, but the patient was absolutely unable to remove it. He tried to remove that portion of it, and the rest had irritated the gums and caused a good deal of atrophy. The case had been in nine months, and had been twice removed and replaced. It was done by a very able man.

Mr. BLANDY asked what was the average length of durability of a ridge case.

The PRESIDENT believed that was a matter which depended entirely on the length of the piece. A piece might be very durable and last for years, but he doubted whether it was a practical and useful idea.

Mr. EDWARDS thought it would be likely to get loose if frequently taken out, and how could that be remedied? The little piece he had just looked at was quite loose, and patients might swallow it during the night quite comfortably.

Mr. HARDING said Mr. Gartrell had been wearing a small case, a duplicate of which was being passed round, for two years. It was a small continuous gum piece.

Dr. WALKER said he had been watching a case for four years, the results were very satisfactory; and one which he himself saw in when the International Medical Congress met in 1881, by Thompson, was still in good condition.

Mr. BRUNTON said he had had the pleasure of seeing the case in the mouth of Mr. Gartrell. Of course bridge-work was a new thing almost, but he thought Mr. Gartrell's method was a distinct advance.

Mr. Brunton exhibited a piece of work done in Japan—an artificial upper made of wood, with teeth carved from walrus bone inserted. It was a beautiful piece of teeth carpentry and showed the possibility of doing work without a plaster of Paris model. He also passed round for inspection a lower piece made in the same. It was made by a native Japanese, a tooth carpenter sitting on the roadside.

Mr. BLANDY submitted for inspection a new form of separator made by himself, which he intended to hand over to the Dental Manufacturing Company.

On the motion of Mr. STOREY, seconded by Mr. HARRISON, thanks were cordially voted to the exhibitors and authors of the casual communications.

Mr. J. A. FOTHERGILL said: I have here the model of a case of some interest. The patient, a lady aged about thirty-two, came to me a month ago, complaining of slight pain and looseness in her left upper lateral incisor, a tooth in which I had put a somewhat conspicuous gold filling about five years before. She also pointed out a minute sharp object in the palate near the inverted distal edge of the same tooth. This proved to be the point of a heretofore missing canine tooth. I took a model and requested her to call again when the tooth came down a little further. She did so, and as the canine was about a quarter of an inch below the gum I removed the unsightly lateral.

The next model shews two supernumerary teeth of rather unusual form, placed behind the central incisors.

Soon after seeing the above I happened to read the valedictory address of the president of the Anthropological Institute, Mr. Francis Galton, F.R.S. As Mr. Galton has been prosecuting enquiries into heredity, variation, and correlation in man, I wrote asking if this had occurred to him, and whether observations on hereditary dentition and variation would be of any scientific value. He replied: "Hereditary dentition has often been suggested to me, and it has occurred to myself also, as a promising subject for careful study. The difficulty is to get facts in a trustworthy, complete and manageable form.

"I doubt whether the simple question of supernumerary teeth

of much probable value, unless a large number of cases could be got at, in each of which the family was worked out with much completeness."

Every dentist must have observed the frequency with which peculiarities in shape, size and position of the teeth are transmitted by parents to their offspring. If Mr. Galton could be induced to read a paper before our Association stating the conditions under which observations should be made, I think it would create such interest in the subject that he would soon be in possession of sufficient data to form his generalisations.

We do not at present know how far and on what lines dental diseases is hereditary, and I think this also would form a probable subject for investigation.

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(Concluded from page 406.)

DISCUSSION ON MR. HARRISON'S PAPER, "DENTAL EDUCATION."

The PRESIDENT said they had heard a very interesting paper from Mr. Harrison, and he should be very glad to hear some remarks upon it from Members and visitors.

Mr. MORTON SMALE said Mr. Harrison's paper had gone over a large amount of ground that he felt it somewhat difficult, in the short space of time at his command, to go over it all. First, as to the dental school at Guy's. There was a great deal to be said in favour of a dental school at the general hospitals, but there did seem to him to be one very great danger about it, and that was that surgeons would find out there that they could practise as dentists without being on the Dental Register. They could go to the classes held by the dental surgeons of the hospital, and there they would find out, after being there two or three times, that they had got a little smattering of dentistry—that they could in the country or abroad and commence practising dentistry. But, he thought, would be a very dangerous condition of things, in which the authorities of the hospitals ought to be on their guard. He should be very sorry to see the dental profession saddled with what he might call unqualified medical dentists—for unqualified they would be as to dentistry at any rate. Then, as he knew, he was not at all satisfied with the London curriculum.

He should be very glad indeed to see a very large addition to that curriculum—or, rather, he wanted to see a very great alteration in the curriculum. He should like to see all students for the first two years of hospital life to be running exactly on the same lines as the ordinary medical student; that there should be no distinction at all, that they should be required to pass the same examination in elementary subjects, that is to say, in materia medica and practical chemistry, elementary physiology, anatomy—at the end of the first year. Then at the end of the second year anatomy and physiology just as the ordinary medical student. And then from that time just as the ordinary medical student goes in one direction to obtain his medical diploma, so the dental student should go in the other direction to obtain his dental diploma. They would thus weld the two professions, and he could not think of any better plan. That was the alteration he should like to see. When the curriculum was drawn up in 1859 or 1860—he forgot which—it was drawn up with the old M.R.C.S. before them, and it was under those conditions very easy, or comparatively easy, for a man to take his M.R.C.S. and L.D.S. degrees; but now, under the new condition of things, it was exceedingly difficult for a man to take the conjoint examination. But it would not be so difficult a thing if they could have their dental curriculum altered a little, for more things were required of the dental, than were required of the ordinary medical student; he had to attend something like another course of lectures on the head and neck more than the ordinary medical student. In addition to that he was obliged to attend his materia medica lectures, for instance, at the hospital, and elementary chemistry, all of which could be obtained by the ordinary medical student before he came to the hospital. Dental students could not do that. He contended they ought to be treated exactly on the same lines. So far as he had thought the question out—and he had devoted considerable time to it—he could see no other way except that of letting the men run on the same lines exactly. Then, he thought, there would be no difficulty. Then if a man wished to get another diploma—he wished to carefully avoid the idea of a higher diploma—if a man felt he wanted an additional diploma, let him take the general one. A higher diploma had been talked about by some branches, but it seemed to him they could only enlarge the curriculum on the general side. Dentistry itself was too small a subject to be enlarged. The enlargement must take place on the general side. That being so,

they had all things provided for them already. He quite agreed with Mr. Harrison in what he had said about mechanical dentistry. He thought it was most desirable for a man to spend two years in the work-room—that he should be made to work there, for the fault was not that of the student very often, but the master. Masters did not make the men work, but allowed them to go about boating or playing—anywhere, in fact, rather than in the work-room. If they were to ask some students any ordinary question in mechanical dentistry they would not know much about it. Men who took apprentices were undertaking a very great responsibility, and they ought to take very great care they did their duty to the men they had promised to educate. He would be very glad personally to see mechanical dentistry taught in general hospitals. He thought the time had very nearly arrived when it would have to be taught at Leicester Square. Poor patients wanted artificial teeth, for he believed them to be necessities, not luxuries; but it was a question whether the provident system referred to by Mr. Harrison would work. The subject, however, was surrounded by many difficulties, the chief being where the money was to come from. People now subscribed to general hospitals and liked to be thought generous, and it would be an exceedingly difficult thing to get people to give up the idea. They were wedded to it in this country, and he did not think it would work satisfactorily if they tried to make people pay when they went to a hospital. Now if a patient was given a ticket for so much gold, and he required more, he had to pay for it. They had not gone so far as that, but he was afraid they would not get much further. Mr. Harrison seemed to think there had not been enough done at Leicester Square. Perhaps they did not do enough. He was always telling the students so, but they did not always agree with him—the house surgeons especially—when a large number of patients had to be got through. It took a large amount of time. Another question had been raised by Mr. Harrison, and that was representation on the Medical Council. Well, it was not perfectly easy to get representation on the Medical Council if they could only pull together and make up their minds to get a representative there. Every few years the medical profession elected twelve members of their own profession on to their Council as their representatives. The time for that was very near. If it were desirable—he did not think it was—when those vacancies occurred that they should have direct representation it was of course quite

possible for them to run a candidate for representation on that Council. Of course they must take care in the selection of their candidate to choose a man who knew something about the medical side of the work as well as the dental. The only man he knew suitable was Mr. Charles Tomes, and if the dental profession would run him, and he consented, and they got every medical man to give one of his three votes, they would take him in at the head of the poll.

Mr. CANTON said he should like to say one word on the point. He was afraid they would make a mistake if they did have a representative on the Medical Council. One voice among so many would be as nothing at all. At the present they were bound to look after their interest for the reason that they had no representative. He thought they ought to think twice before they agitated that point.

Mr. CUNNINGHAM said that the last speaker seemed to think Mr. Harrison was wrong in introducing the question of direct representation on the Medical Council. He (the speaker) was of the very opposite opinion, because that was the body which controlled their education. It was important, therefore, they should be able to bring the matter forward and express their views on it. He felt sure the profession would not let the matter drop, but have a good try at the next election. They had certain members of their own profession entitled to a vote, and he would suggest that instead of exercising their three votes by voting for three candidates they should do something better—plump for their “own.”

With regard to dental schools at general hospitals, that was a very big question which would require a whole afternoon to discuss. There were practical difficulties in the way. They were badly off for teachers, and it was a pity they had not been able to develop their own schools so as to have teachers well enough paid to be independent of private practice. The difficulty was to get men to teach. They were all very well to commence with, but after a time the enthusiasm wore off. Even in his time it used to be all lectures and very little practical work, but now lectures were relatively unimportant and practical work everything. That was with regard to medical education, and they wanted something of the same kind with regard to dentistry; they wanted development of the practical side of subjects at present taught by lecture. It was said they should not encourage the medical

to know anything of dentistry, because he might abuse his knowledge. They must act on broader and more generous grounds than that. They must teach it, even supposing a few men were to abuse it.

Then with regard to the enlargement of the curriculum, he thought Mr. Smale's remarks most cheering; the views he had put down were those of an ideal curriculum, and the curriculum of the future, similar to but more extensive than that of Harvard. He could personally testify to the success of the scheme in America, and he thought if they could emulate something of the kind it would be intensely good. Then with regard to the higher degree, Mr. Smale's remarks were, on the whole, satisfactory; but at the same time when he said if we wanted further education in dentistry we could only find it on the general principle he quite agreed, if he would not define that as purely theoretical. He thought it grossly absurd that a man should be ignorant of the dentition of different animals without knowing anything about their morphology, therefore the student should be taught that. Then with regard to operative dental surgery, he considered Mr. Harrison's point a good one. He hoped they would not think him egotistical, but being the holder of an unique position, he thought that such a scheme of lectures was of use, since, coming from the students attending the hospital, certain members of the profession had honoured him with their attendance. He thought, too, other schools would do well to institute such lectures. With regard to mechanical training, that too was a very important matter, but the fault was inevitably in the system. How could we ensure that every man who took a pupil would be a teacher? There should really be some refuge for the dental student so that he should not, under such circumstances, be turned out incompetent, and the only way they could do that was by developing the mechanical side—by teaching it in our schools. Then, again, with regard to the provident system, he was a very strong believer

Men were often willing to pay something to help themselves, and he believed such an institution would be self-supporting. They might form a syndicate of straightforward men who would make it their first principle to teach men their work. Patients would be well served, and so sanguine was he of ultimate success that he would put down a considerable sum of money in a concern. They would be appealing to a class of the community not yet touched. Only the other day a letter came to the

secretary of a hospital from a clerk with £1 per week, who stated he was convinced from a lecture he had heard that his health was in a bad state, because of the bad condition of his mouth, and he asked whether he could not have some teeth put in on deferred payments. The secretary, however, had to write he was sorry he could not do anything, and recommended him to apply to some practitioner. Was it not, therefore, a sad thing that a poor man willing to pay a reasonable sum, even if by instalments, could not be relieved? Probably that man was going about till this day with his mouth unattended to. He would have found what he wanted in a provident dental institute. With regard to the figures on gold fillings, he thought it was an unfortunate thing they were introduced. When a man quoted figures he should quote them with a purpose. What was the good of giving the totals of fillings without giving the number of students? It ought to be the ratio of gold fillings with the ratio of students. He thought the figures ought to be analysed, and he would, therefore, ask Mr. Harrison to amend his figures and then they would be valuable. At the present moment they were absolutely worthless.

These were subjects which should not be lightly touched upon at a meeting like the present. He did not think they should lose sight of the fact that the advanced condition of the profession to-day was due to our schools, and if it could be possible to have a special conference on this question of dental education, he thought it would be a very good thing, because he knew there were others who had devoted time and thought to the question, calling out for further improvement. He should prefer one good school, and that the solution of the difficulty should not be left to a mere isolated part of the profession.

Mr. Alderman RYMER said he was about to move that the discussion on this important and interesting matter should be continued at the next informal meeting of the branch. They had had the benefit of listening to the paper and the very important remarks which had fallen from gentlemen beyond the local centre. The paper and discussion would no doubt be printed, and the local members after perusing it would be very pleased to discuss the question further.

The HON. SECRETARY seconded.

The PRESIDENT, in putting the resolution to the meeting, said he thought they ought at the same time to express their thanks to Dr. Harrison and their appreciation of the very able paper which

had caused such a discussion. He considered it a most important subject. He thought, too, they ought to thank those gentlemen who had taken part in the discussion. He would mention that Mr. Reinhardt had kindly consented to postpone the reading of his paper and to give it at the Annual Meeting in August.

This concluded the business of the meeting.

THE ANNUAL DINNER

took place at the Calverley Hotel at six o'clock, the President being supported by the Mayor (J. Stone Wigg, Esq.), Dr. Johnson, Dr. Vise, Dr. Stamford, Dr. Adeney, Dr. Starling, Dr. Watson, Dr. Du Buisson and Dr. Abbot. On the lawn in front of the hotel the Ceylon Band was stationed, and played a choice selection of music during the dinner.

The usual loyal and patriotic toasts having been proposed from the chair,

Dr. JOHNSON rose to propose the toast of the evening, "The Dental Association and the Southern Counties Branch." It had been said that imitation was the sincerest form of flattery, and from what he had learnt that evening from his neighbours, Mr. Morton Smale and Mr. Cornelius Wheeler, he had come to the conclusion that the dental profession was very closely following the lines of the British Medical Association. He had been a member of the latter association for some thirty-five years, and he did not think they could do better than follow its example, socially, professionally and scientifically. He was very happy to think that the dentists of England were taking that position amongst them that rendered them worthy *confrères* and admirable associates. He wished them all success and prosperity; may their association flourish for ever. He desired to associate with the toast the name of Mr. Morton Smale, and their worthy president, his friend Mr. Bacon.

Mr. MORTON SMALE, in response, remarked it was very kind of Dr. Johnson to have said so many kind things with regard to their Association, and it was quite true they were trying to the best of their ability to follow the good example set them by the British Medical Association—following closely whatever they thought good, and avoiding whatever they thought not up to date and striking out upon fresh ground. As a rule they had found the British Medical Association an exceedingly good one to follow

and the result had been they had been able in the past to weld their profession together in a very remarkable way. Ten years ago he could remember men of the same profession in the same town used to pass each other in the street, one looking one side and the other the other, pretending not to know each other. Such a thing in the present day would be impossible. All the dentists of a town—at any rate the reputable dentists, he did not recognise the disreputable dentists at all—recognised each other as members of the same honourable profession. The medical profession, with a register dating back to 1815, had not been able to get rid of the bone setter, the herbalist and the advertiser. They now found men entering the dental profession labouring for its good, sacrificing time, money and energy for its advancement, men with whom all could associate and work together. He felt they had a very grand future before them if they would only take care and have no division in their ranks, and no bickerings. They must put up with a few idiosyncracies of individuals, and pull together for the good of their profession. If they would do that they had a grand and noble future before them.

The PRESIDENT also responded. He thought all had been said respecting the British Dental Association that could be said, and he trusted the Southern Counties Branch would not be found behind-hand in its endeavours to do that which was right and in the raising and elevating of the profession. He thanked them for the honour conferred upon him, which he could assure them he valued and appreciated very highly.

Mr. UNDERWOOD proposed and Mr. ADENEY responded for the medical profession.

The PRESIDENT next proposed the toast of the "Mayor and Corporation of Tunbridge Wells" and coupled with the toast Mr. Stone-Wigg.

The MAYOR, in response, said he was deeply indebted to their President for the kind way in which he had proposed his health. He was quite correct in saying this was the youngest borough in the United Kingdom, and he had the honour of being elected its first mayor, having served on the governing body of the town for the last thirty years. He thought it was a great advantage to this town to have such an honourable body paying it a visit, for he felt certain they could not help recommending it to their friends and *clientèle*. He had no hesitation in saying no country could show such magnificent scenery as Tunbridge Wells. Personally he was

very much obliged to their noble President for the kind invitation extended to him by members of his own family. He hoped this would not be the last time this Association would pay Tunbridge Wells a visit, and if he held the honourable office of mayor he should be pleased to welcome them.

Mr. F. CANTON proposed "The Benevolent Fund of the British Dental Association," and Mr. DENNANT responded.

Mr. CORNELIUS WHEELER next proposed the health of the Visitors, and Dr. STAMFORD having replied, the PRESIDENT said he had forgotten to mention that Mr. Bell had very kindly and very ably performed the duties of local hon. secretary, and had assisted him very much—in fact, he could not have done more had the honour been all for himself. He therefore desired to take this opportunity of thanking him for the assistance he had so kindly rendered at very considerable inconvenience to himself.

Mr. BELL, in response, said the work he had done in connection with the meeting had been undertaken *con amore*, and he had been very glad indeed that the meeting should be held in this town. He hoped the time was not far distant when they would meet again in Tunbridge Wells.

Mr. DENNANT said he had asked permission to propose a toast, and it was one he knew would be received with the greatest enthusiasm, inasmuch as it was that of their ex-President, who had vacated the chair that day, a gentleman who had performed his duties most splendidly. He was not going to make him uncomfortable by saying all the kindly and good things he could say of him, for they had his genial presence, which spoke for itself; but he did not think they could separate without giving him their warmest thanks for all he had done for them.

The Ex-PRESIDENT, in response, said he was very grateful, and if they would allow him he would propose another toast which ought to have been proposed at an earlier period of the evening—it was the health of their President, Mr. Beadell Bacon, who had treated them that day in such a hospitable manner. He had provided for them a magnificent drive through the lovely country, and had shown them some of the many beauties of Tunbridge Wells, which made them long the visit might be extended for a week, though he doubted whether he would be prepared to entertain them for that time. He wished him a prosperous year, and good health to enjoy it.

The PRESIDENT responded, assuring them it had given him a

vast amount of pleasure to receive them, and he should very much like, did circumstances permit, that their visit should be prolonged for a week, so that they could see a few of the beauties of this beautiful country, as he was sure they would not be exhausted in that time.

Mr. CUNNINGHAM said he should like to say a few words. Why he had craved permission to speak was to introduce the subject of the proposed International Dental Congress in Paris, of which, if they wanted any information, they had had to go to foreign journals—including American—which, he thought, was very unfortunate. Hitherto there had been no mention of it, except in the Blue Journal, but before the Congress comes on full information would be given. When in Paris he happened to meet some of the men connected with the Congress, who asked him to interest his countrymen in it. Seeing it was the first of the kind it was well they should show, as a profession in England, some attitude in the matter. Unfortunately so far that attitude has been that of boycotting, which was, he believed, unintentional, and merely from the lack of information. The men who were managing the Congress represented two rival schools in France, one representing the surgeon practising dentistry, and the other dentistry pure and simple. He felt it important that that temporary union should be a permanent one, and that they should remove the impression from Frenchmen that their intention was to boycott them. It was not impossible that Sir John Tomes would be the president *d'honneur*. He knew invitations were duly prepared, but unfortunately the invitations had never arrived, and they had asked him to do something to remedy the unfortunate accident, for which they were personally not responsible. They ardently desired to have representatives from this country. There would be deputations from America, Holland, Norway and Sweden, Germany, Italy, and Switzerland, and it would be a great pity if England remained out in the cold. His main object in addressing them now was to announce that the Organising Committee in Paris purported sending over a delegation to Brighton, and he was sure they would be cordially received. He should be very glad indeed if he could convey to M. Dubois—the editor of the most important dental journal in France—that assurance. If your President could do anything to further the cause it would be well, or if he could manage to go over during the Congress—which would be from

the 1st September to the 7th—especially as the representative of the Branch, it would be a compliment Frenchmen would appreciate.

The PRESIDENT thought the remarks which had fallen from Mr. Cunningham required a few words from him. They had been so delighted with the trip to Penshurst and what they saw there that it was difficult to get them away. That, of course, shortened the time for business, which he, personally, regretted very much. Mr. Reinhardt had, however, very kindly promised to give his paper at Brighton, and, therefore, it would not be lost—it was merely a pleasure postponed. He desired to thank Mr. Cunningham for his interesting information with respect to the International Dental Congress in Paris, and the suggestions should receive his attention.

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(Concluded from page 415.)

MR. WHITE proposed, and MR. CUNNINGHAM seconded, a vote of thanks to the President, which was carried unanimously.

MR. R. P. LENNOX then read an able paper, entitled "An Improved Method of Crowning Roots," which appears in the present number as an "original communication." A technical discussion followed, and an opinion having been expressed that the operation would prove a tedious one, Mr. Lennox offered to affix the "Lennox crown" to the tooth of any one of his colleagues within a couple of hours. The challenge was not accepted.

At 1 p.m. the company adjourned to the Cups Hotel, where an excellent cold collation was well served.

After luncheon, Mr. WHITE proposed "The health of their host, the President-Elect (Mr. Amos Kirby, L.D.S.)." Having expressed regret at Mr. Kirby's enforced absence, and paid a high tribute to his professional ability, Mr. White concluded by proposing "The health and speedy recovery of the President-Elect." The toast having been duly honoured, Mr. Cunningham proposed "The health of the Visitors," coupled with the name of Mr. W. B. Bacon, President of the Southern Counties Branch of the Association.

MR. BACON briefly responded, remarking that these meetings were a great source of benefit to the profession.

Business was resumed in the afternoon, when a number of

ingenious professional appliances were exhibited. Chief amongst these was a really marvellous pneumatic mallet, patented by Mr. R. P. Lennox. The mallet itself has precisely the appearance of a large German silver pencil case, and the blows are struck by a metal rod attached to a piston within the case, and driven at a high rate of speed by means of compressed air. The air is supplied through a long flexible pipe connected with a little pair of foot-bellows, and the force of the instrument can be increased or diminished at will by a touch from the finger of the operator. Holding in one hand a hollow tooth, containing a small quantity of gold, Mr. Lennox placed the "nozzle" of the mallet within the tooth, and in an instant the machine struck a rapid succession of blows that effectually condensed the gold. The mallet worked with a buzzing sound that was aptly compared by a Scotsman present to the drone of the bagpipes. Mr. Lennox, working the machine at the rate of 1,000 blows per minute, gave ample proof that this delicate-looking appliance is completely under the operator's control, and is, moreover, admirably adapted to the purpose for which it is designed.

Mr. CUNNINGHAM expressed the opinion that the machine had all the advantages and none of the disadvantages of an electric mallet. He thought that its use would soon be universal.

Mr. R. W. WHITE then delivered an able address on "Separation between the Superior Central Incisors," illustrating his subject by the display of plaster casts for various deformities of the mouth. In the course of his arguments, he advanced the theory that phthisis was usually accompanied by a protrusion of the upper incisors. He further traced the curious transmission of dental malformation in families.

Mr. E. A. DIXON having given many valuable suggestions as to the treatment of children's teeth,

Mr. CUNNINGHAM proceeded to deliver an address on "Dental Ethics." Having deprecated the publication by dentists of their scale of charges, and the display of specimens of work, he hurled a scathing denunciation against quack advertisers, and excited considerable laughter by reading extracts from the advertisements referred to. He asked was it not abominable that people should be imposed upon by men calling themselves Surgeon Dentists to the Queen's household. Mr. Cunningham also condemned the practice too frequently followed by medical men of giving testimonials to so-called dentists, who provided "Guinea sets of teeth."

Mr. R. W. WHITE, having endorsed the remarks of the previous speaker, moved the following resolution :—"That the Secretary of the Eastern Counties Branch be instructed to communicate with the Secretary of the Representative Board of the British Dental Association, calling their attention to the system of medical men giving testimonials to advertising dentists—a system which is still freely in use in this district." The resolution was seconded by the CHAIRMAN and carried unanimously.

The dinner was held at the Cups Hotel in the evening. Mr. WHITE presided, and there were present, in addition to the gentlemen named above, Mr. E. J. Sanders (Mayor of Colchester), Mr. A. W. Frost, Mr. F. Canton (Treasurer of the British Dental Association), and Mr. Morton Smale (Dean of the Dental Hospital, and Hon. Secretary of the Parent Association).

A very pleasant evening was spent. At the conclusion of the repast the loyal toasts were duly honoured, and the CHAIRMAN then gave the toast of "The Army and Navy," to which the HON. SECRETARY, as a lieutenant in the Volunteers, responded.

Dr. WALLACE proposed "The health of the British Dental Association," remarking that it afforded the public a guarantee that the men belonging to it would respect the interests of their patients, and do their duty towards them.

Mr. CANTON (Hon. Treasurer) responded. He said it was a mistake to suppose that the object of the Association was to put down advertising, although that work might come under their objects, which were to elevate the profession. He did not think that there was any truth in the idea that the medical men looked down on their profession, which, he claimed, was a branch of the medical profession, and the attendance of medical men at their meetings he looked upon as a proof of his contention.

Dr. BROWN then gave the toast of the evening—"The health of the Eastern Counties Branch," and said that medical men could safely put their patients in the hands of its members.

Mr. CUNNINGHAM responded, regretting the absence, through illness, of their President-elect, Mr. Amos Kirby, of Bedford. He remarked that the great object of the Association was to draw a clear distinction between the quack and the reputable dentist.

The CHAIRMAN then gave "The health of the Mayor," who, in responding, said he regretted he was not earlier aware of the Association's visit, as he should have liked to offer them his hospitality.

The local members of the Association, Messrs. W. Marsh, Buck, and E. A. Dixon, were also included in the toast, and severally responded.

Mr. MORTON SMALE proposed "The health of the Medical Profession," characterising it as the noblest calling in the world. He appealed to them to make it a rule not to recommend a dentist unless he was a member of the British Dental Association and not to give testimonials to unqualified and unregistered practitioners. Advertising was a disreputable thing, but it was a free country, and everyone was at liberty to be disreputable if he liked. He urged dentists to avoid being guilty of such a proceeding, for they could not throw stones at others if they were themselves living in glass houses.

Dr. WALLACE expressed his regret at the absence of Mr. Law, who was prevented by an accident from attending, and who would probably have had something to say about children's teeth. The health of the Press was heartily drunk, and acknowledged by Mr. C. E. BENHAM, and the Chairman's health was also warmly received.

Recitations were given during the evening by Mr. Lennox and Mr. Hall, Mr. R. A. Mann contributing instrumental music at intervals during the proceedings, and the successful gathering broke up at the usual hour.

The Annual Meeting of the Central Counties Branch.

ON Saturday, June 22nd, the Annual Meeting of the above Branch was held at Newark, the President of the year being R. F. H. King, L.D.S., R.C.S.Eng.

After an excellent luncheon at the residence of the President in Appletongate, a meeting of the council was held at one o'clock at which Mr. John Humphreys resigned the post of hon. secretary which he has so ably held during the last four years. Mr. W. Harding, of Shrewsbury, and Mr. Charles Sims, of Birmingham, were elected members of the Representative Board, and Mr. R. Howard and Mr. W. Elliott, of Birmingham, were elected members of the British Dental Association. At 1.15 the President's address was delivered and the election of officers took place as follows:—F. C. B. Cave (Birmingham), President-elect.

Frank Huxley (Birmingham), Treasurer; W. Palethorpe (Birmingham), Hon. Sec.

At 1.45 the members paid a visit to Messrs. Cafferata's plaster works, where the process of manufacture was explained by one of the principals. The visit was of considerable interest to the members of the dental profession, on account of the material produced at the works being used for modelling purposes.

About three o'clock the company were conveyed to the Rovings at Farndon, where they went on board Mr. King's house-boat, and were towed up the river to Hazleford. The afternoon was beautifully fine, the rays of a hot summer sun being tempered by a gentle, refreshing breeze. Seated under a canopy on the top of the boat, the visitors had the pleasure of enjoying a view of the pretty scenery at Stoke and at other picturesque places adjoining the stream, and were regaled *en route* with fruits and beverages. Everything was done that the wise forethought of the genial president and his family could suggest to add to the enjoyment of all present, and the hearty and kindly hospitality extended to all the guests was highly appreciated. During part of the journey the boat was drawn by a horse, but from Farndon to Fiskerton by Mr. F. J. Caparn's steam launch, which also conveyed some of the visitors.

On arriving at Hazleford the company was photographed by Mr. Bliss on the boat and also on the lawn, two excellent groups being taken. An excellent dinner was provided at the Star and Garter. The *menu* was all that could be desired, and the dinner was served in admirable style by the host, Mr. Merryfield. Mr. King presided, and there were also present—Mr. G. C. MacAdam, Hereford, late president; Mr. John Humphreys, hon. sec., Birmingham; Mr. and Mrs. H. Blandy, Nottingham; Mr. W. E. Harding and Mr. Roff King, Shrewsbury; Mr. F. E. Huxley, Birmingham; Mr. H. and Mrs. Morley, Derby; Mr. and Mrs. Dean Jones, Stoke Newington, London; Dr. and Mrs. Job, Dr. and Mrs. Matterson, The Ven. Archdeacon Maltby, Mr. and Mrs. Cornelius Brown, Mr. F. W. Richards, Birmingham; Mr. J. N. Manton, Mrs. Manton and Miss Manton, Wakefield; Mr. G. H. Williams, Newark; Mr. F. H. Baily King, Mr. Hyde Baily King, Mr. Louis Baily King, Miss King, Mr. C. Simms, Birmingham; Mr. F. J. Caparn, and others. Letters of apology had been received from Mr. Smith Turner, London; Dr. Walker, London; Dr. Walker, Worksop; Dr. Fleming, Worksop; Dr. Lucas,

Newark; Dr. O'Neil, Newark; Lieutenant-Colonel Newton, Newark; Mr. R. J. Beard, Newark; Mr. J. C. Cropper; Mr. I. Cafferata, Irnham Park; Dr. Appleby, Newark; Dr. Hallowe, Newark; Dr. Ennels, Hull; Mr. E. Sharpley, Hull; Mr. A. Levason, Hereford; and Dr. F. Broadbent, Collingham.

After the repast had been enjoyed the PRESIDENT gave the usual loyal toasts in felicitous terms, and they were duly honoured.

Mr. E. DEAN JONES proposed "the Bishop and Clergy of the Diocese," remarking that the clergy, like the dentists, were healers. It was the mission of the dentist to relieve and remove the source of intense physical pain and suffering, and it was the mission of the clergy to minister to a mind diseased, and to bring peace and comfort to the soul. He was sure, therefore, they would accept the toast with the greatest heartiness, and he had to couple with the name of the Archdeacon of Nottingham.

The Ven. Archdeacon MALTBY, in replying, said it was a great pleasure to him to be present on that occasion to support his old friend and neighbour, Mr. King, and also to meet men of science who were engaged in developing science. He looked upon science as the co-sister of the church. They were both engaged in the same mission. Science developed what the church was the guardian of—the great truths of the unseen. Therefore, the missions were very similar, and it was only fitting that they should go hand in hand. They could look back with complacency upon the time of the middle ages, when the church felt jealous of science, and watched her with no kindly eye. When they thought of Galileo and the Inquisition, they were much inclined to smile and to regret the blindness of those who had gone before. He was very glad that on this occasion their President had invited them to the romantic village of Hazleford, on the banks of the old Trent. He wished the Trent was more known amongst strangers, as a visit to it would well repay their time and pains. They could not at this period of the year have the opportunity of gathering hazel nuts, but their President had chosen a very pretty spot at which to celebrate this gathering. He thanked them for the kind manner in which they had proposed the health of the clergy. He hoped their health would always be good, and he was sure they owed a great deal to the science of dentistry for their good health and their powers of speech. People did not mumble so much as they did in the old days, and they had to thank the dental profession for assisting them in distinct reading.

Mr. C. SIMMS proposed the "Army, Navy, and Reserve Forces," and said the services were always spoken of amongst Englishmen with pride and pleasure.

Mr. F. J. CAPARN and Mr. F. H. BAILY KING replied, as did also Dr. JOB, the latter remarking that some of the pleasantest days in his life had been spent in the services.

Mr. F. E. HUXLEY proposed "The Medical Profession of Newark." He remarked that the medical and dental professions came into very intimate contact, and he was quite sure they always maintained a very proper respect for each other.

Mr. MATTERSON, in replying, said he was glad to have attended such an important gathering, and to have enjoyed this most pleasant and toothsome dinner. It was so good that it did not require a great display of plate; and he believed the dentist best showed his skill when he showed the least plate. When he first came to Newark there were about thirteen medical men in the town, but now there were only six. What was the cause of this? He sometimes thought the present sanitary acts might have something to do with it, or perhaps it was the extraordinary and superior skill of the present generation.

Dr. JOB also replied, and expressed his pleasure at seeing Mr. King in the chair. He was sure the Association could not have selected a better man to represent them as President, and he had no doubt his year of office would be happy and successful.

Mr. MANTON proposed "The Medical Charities of the County, and the Newark Hospital and Dispensary and Medical Staff," referring to the amount of valuable time so liberally given by the honorary medical officers to these institutions.

Dr. JOB replied to the toast, and spoke of the great value of the Newark Hospital.

Mr. ROFF KING, in a capital speech, proposed "The Ladies," and Mr. Blandy gave "The Health of the President," thanking him heartily for the very kind and hospitable manner in which he had entertained them. They had always found Mr. King a staunch friend and a genial companion, and they were most grateful to him for his kind reception that day, and for the wise words of counsel he had addressed to them. The toast was drunk enthusiastically and with musical honours.

The PRESIDENT said he felt flattered by the hearty way in which his health had been drunk. As it was such a pleasant evening they would now dispense with further toasts and enjoy themselves

out of doors. The company then returned to the ground adjoining the hostelry, and shortly afterwards dispersed to catch the trains, after spending a memorable and most delightful day.

Western Counties Branch.

THE annual meeting of the Western Counties Branch was held at the Park Hotel, Cardiff, on Friday, July 26th, 1889. Mr. F. BALKWILL presided, and there were also present: Messrs. C. Oliver, Cardiff, President-elect; E. Apperly, Stroud; G. McAdam, Hereford; E. L. Dudley, Bath; J. T. Browne-Massey (hon. treasurer), Exeter; Caleb Williams, Leamington; Ernest Fox, Gloucester; William Helyar, Bristol; Henry B. Massey (hon. sec.), Exeter; A. Smith, Clifton; H. P. Fernald, Cheltenham; W. H. Waite, Liverpool; W. E. Harding, Shrewsbury; J. Thomas, Swansea; E. R. Gay, Merthyr; Harry Rose, London; S. Greatrex Yates, Ross; J. J. H. Sanders, Barnstaple; H. Cowlill, Ilfracombe; W. J. Goodman, Exeter; Dr. Walker, London; Morton Smale, London; Edwin Goodman, Taunton; Graham W. White, Newport, Mon.; Carlton H. Riches, Cardiff; Edward Little, Newport, Mon.; Jesse W. Stanton, Newport, Mon.; T. Gill Williams, Newport, Mon.; Thomas Quinlan, Cardiff; H. Cecil Riches, Penarth; Chas. F. Peaty, Cardiff; J. Vachell, Cardiff; H. W. Griffiths, Newport, Mon.; and others.

The SECRETARY having read the minutes of the last meeting and these having been confirmed, letters of apology were received as follows from Messrs. R. Rogers, Cheltenham; J. Snodgrass, London; James Parkinson; C. Spence Bate, Plymouth; T. Cooke Parson, Clifton; A. Kendrick, Taunton.

The PRESIDENT announced that the following gentlemen had been elected members of the Association and Branch: Mr. E. R. Gay, Merthyr; Mr. T. Quinlan, Cardiff; Mr. H. C. Riches, Penarth; Mr. H. H. Tackett, Bath; and of the Branch, Mr. W. Mountford, Plymouth; Mr. Graham W. White, Newport; Mr. T. Gill Williams, Newport; Mr. H. W. Griffiths, Newport; and Mr. Henry James Thomas, Swansea.

The SECRETARY read his report of the Council.

REPORT OF COUNCIL.

The Council have much pleasure in presenting their annual report to the general meeting of members.

The meeting at Plymouth last year, in spite of the changes necessitated by the refusal of Mr. Rogers Bate to act as President-elect, and, notwithstanding the unfavourable weather, was numerously attended and very successful. The Council feel they are much indebted to Mr. Balkwill for accepting the Presidency at so short a notice, and they offer him their congratulations on the successful result of his arrangements. The President delivered a thoughtful and well-reasoned address, and the papers and demonstrations by Messrs. Paul Swain, Oliver, Ackland, Gartrell, Cooke Parson, Keys, and Biggs were of more than usual interest and merit.

The April meeting of the Council was held this year at Weston. Amongst the subjects there brought forward was the advisability of holding more frequent meetings, and a resolution was arrived at that, for the future, subsequent to each meeting of the Council, an informal meeting shall be held open to all members of the Association. The Council also adopted a suggestion of Mr. Booth Pearsall, made through Mr. A. J. Woodhouse, Hon. Treasurer of the Dental Benevolent Fund, that a box be provided to be placed on the table at each meeting of the Branch for the reception of contributions to that Fund. It is hoped this may be the means of obtaining a substantial addition to the funds. The Council have issued in the name of the Branch an invitation to the Central Association to hold the Annual Meeting for 1890 at Clifton, but unfortunately the suggested President, Mr. Cooke Parson, has felt bound to decline the office on account of ill-health. Under these circumstances the Council suggest that the Association be invited to hold the meeting at Exeter.

The Council regret to announce the death of Mr. W. V. Moore, of Plymouth, a gentleman who in the early days of the Association took a prominent part both in its formation and management. He was hon. secretary from the time what is now this branch was formed at Plymouth, in April, 1879, as the Western Counties Dental Association, till 1883, and remained a member of the Council to the time of his death. The Council feel they cannot omit from their report the acknowledgment of his valuable services and an expression of sincere regret at his loss.

The Treasurer's report compares very favourably with previous years, and the financial position of the branch is quite satisfactory.

The Council are glad to be again able to chronicle an increase in the number of members. Since the meeting at Plymouth the

next meeting at Clifton, but the unfortunate state of Mr. Cooke Parson's health since that was decided upon was such that they were compelled to make a change. Under the circumstances the only thing to do was to renew the invitation to Exeter instead of Clifton, and to propose Mr. Browne-Mason in lieu of Mr. Cooke Parson as president.

Mr. HARDING then rose and proposed the report of the Council and the Treasurer's statement of accounts be received and adopted. The feature, he said, that struck me in the report was that which referred to Mr. Cooke Parson's health. He was sure it was a source of deep regret to the Branch generally that this gentleman was not able to accept the office of President for the coming year. They could only hope that within some measurable time Mr. Cooke Parson's health would be restored, and that they would have the pleasure of seeing him in the chair. The Branch was happy in having a member of such qualities as Mr. Browne-Mason to fill the position, and he had no doubt they would have a very good meeting in Exeter. The report showed renewed life and energy characterised the Western Branch. They could not stand still; they must either go forward or backward, and he was glad to see there was such a large accession of members. That led him to refer to another paragraph in the report—that with respect to bye-meetings. He felt convinced, and it had been the experience of other branches, that the way to get as members those who should join the Association was to go to them. If bye-meetings were held in a district during the year it led men to think of the society. In one or two of the branches—the Southern Counties and Midland—they had two or three informal meetings during the course of the winter, sometimes in towns where they had not a single member. In this way a considerable accession of strength was secured. They needed the help, the support, and the subscriptions of new members. Another point to which he would like to advert was the death of Mr. Moore. He was sure the Branch greatly regretted his death. He then formally moved the adoption of the report.

Mr. HELYAR seconded the proposition, which was unanimously carried.

The PRESIDENT reported that there were three vacancies in the Council, caused by the retirement of the following :—Mr. F. Fox, Mr. W. O. Moore (deceased), and Mr. F. Youngman. The

following were unanimously elected to fill their places : Mr. W. I. Cornelius, Mr. A. Kendrick and Mr. R. Rogers.

The following were unanimously nominated by the Branch to fill vacancies on the Representative Board of the British Dental Association : Mr. Apperly and Mr. Dudley.

The PRESIDENT then said he had to resign his office, and he did so with very mingled feelings. It was said, "Happy was the man whose life was not very full of events." It had not been a very eventful year, but it had been pleasant. He had attended as the representative of the Branch the very brilliant meeting they had had in Dublin, and received every courtesy and civility there as the President of the Western Branch. One thing which had struck him during his year of office, and which had exercised him a little and on which perhaps he might be allowed to remark, was that the younger men of the profession did not attend the meetings oftener than they did. For this, he thought, perhaps there might be two reasons. In the first place, the younger men were latest from the schools, and were more "up" in all the latest methods. So, perhaps, they felt there was not much to be learned from the "old fogies." On the other hand, perhaps they felt they did not get so very much show at the meetings as they would like. He thought if they would attend they would find these things right themselves. The older members would be very happy to receive from them newer methods, if any advantages were to be gained, and, on the other hand, the younger men would find in commencing practice that there were many difficulties to meet which they would not meet in the schools, and the older men could give them help. He had met nothing but courtesy from the members of the Branch during his year of office, and he himself had experienced very great pleasure through holding it. He then formally vacated the chair, which was taken by Mr. J. C. Oliver, of Cardiff.

Mr. OLIVER (President-elect) then took the chair and proceeded to deliver his presidential address.

GENTLEMEN,—Allow me to thank you for the honour conferred in electing me as your President for the forthcoming year. I am assured that I shall use my best endeavours to further the one great object of the Association, viz., the efficiency of our profession in its mission of usefulness to society.

In addressing myself to this subject, I would like in a few words to draw cursory attention to some of the essentials in dentistry.

practice, and first let me point out what I consider to be the great hindrance that stands in the way of our highest and best service.

The highest office that our profession can engage in is the preservation of the natural teeth. All who have this work at heart must lament the ignorance and indifference that prevails in the public mind in this country as to the value and uses of the organs, and consequently the small concern generally manifested for their preservation.

Were but the elementary facts relating to teeth—their universal tendency to decay and the consequences attending their loss, together with the value of conservative dentistry in their preservation, known and accepted, millions would be spared suffering, ill-health, and shortened lives, that would be appreciably felt by the community, so that as a matter of political as well as social economy the nation would be a great gainer.

Especially sad is it to witness the ravages that decay is permitted to make in the mouths of children, whose lives are thus early blighted, simply because parents and teachers do not understand the necessity of early, continuous and systematic watchfulness of these delicate structures.

As an association young in years our days of usefulness are before us, nor do I think we could render a better or more needed service, or one that would be more gratefully accepted, than to offer to the public the results of our collective knowledge and experience in a summary of facts and rules for their special guidance.

This unique service is what no individual can render. Writers on these subjects are usually regarded with suspicion and their sayings as of private interpretation, but few would dispute the wisdom or suspect the motives of suggestions proceeding from such a source as that of the British Dental Association.

Were the Association to become thus recognised as the authority on dental hygiene, it would be easy through the medical profession and through members of our Association to bring such educational influences to bear, that ere long general knowledge on the subject would increase, it would become entwined in the national system of education, and every one would learn to duly care for their natural teeth.

Mechanical dentistry as applied to the manufacture of artificial teeth has of late years attained a considerable amount of proficiency, but I am of opinion that the operation of modelling has

not yet been reduced to that perfection that the fundamental nature of the operation demands. The element of uncertainty, instead of as at present always existent, should have no place. Dr. Walker, who is with us to-day, has kindly consented to demonstrate on this subject, and as he is a master of the art, we shall have the benefit of his special knowledge and instruction. Might I be excused by Mr. Morton Smale if I offer the opinion that educationally this subject has not received at the London schools that attention that it might, nor do I think they would overrate its importance if, say during the summer months, demonstrations were given the students weekly by a professor specially appointed thereto. Another desideratum in connection with suction cases is that of the lessening of weight. The strongest force that we have to contend with is that of specific gravity. In overcoming this our chief difficulty would be got rid of. Having experimented with this object, I have been able in some instances to reduce the weight of suction cases to the extent of seven dwts. over that previously worn. This I will further demonstrate in the after part of the day.

In his presidential address last year, Mr. Balkwill drew attention to the latest boom from America—that of Implantation. Martyrs to science will ever be found, but I question whether an operation so contrary to natural laws ought to be promoted by humane and scientific men.

Seeing the subject matter of the papers to be read are of so great importance, I will restrict my further observations to the hope that the discussion on dental hygiene shall not consist merely of an expression of opinions, but that it shall be a register of the report and best judgment that honourable experience can produce, and that the result will be that the public may hereafter learn to regard the British Dental Association as the one reliable authority and source for the supply of all information needful for their dental well being.

We, as an Association, have the power to benefit society immensely in this particular, inasmuch as we possess all the technical knowledge and experience pertaining to this branch of science. May we fulfil our responsibility in distributing this knowledge which might, systematically done, accomplish great results, to the happiness and benefit of society, and to the prosperity of dental surgery as a profession in Great Britain.

Mr. BROWNE-MASON then proposed a cordial vote of thanks to

Mr. Balkwill for his services as President during the past year. He thought their thanks were more especially due inasmuch as Mr. Balkwill came forward when they were "in a hole." When their elected President was obliged to decline taking office Mr. Balkwill took it at short notice, and he had conducted the affairs of the Branch in a way to which no exception could be taken. He would especially like to remark, with regard to what their late President let drop just before, as to the younger members attending the meetings in greater force. He was getting a little aged. He had been in practice now close upon thirty years, and he had never attended a meeting of that character without picking up some wrinkle worth knowing. None of them were too learned; he had been learning ever since he was a student, and the meetings were worth a little sacrifice on the part of any one to attend.

Mr. E. APPERLY seconded the proposition with very great pleasure.

This having been carried unanimously, Mr. BALKWILL briefly expressed his thanks.

Mr. BALKWILL proposed that the best thanks of the meeting be given to the President for his pleasing and important address, in the sentiments of which he supposed all present heartily coincided.

Mr. E. L. DUDLEY seconded.

Mr. BROWNE-MASON put the proposition to the meeting, and it was carried unanimously.

The PRESIDENT having briefly acknowledged the vote,

Dr. C. T. VACHELL read his paper on the "Borderland of Medicine and Dentistry," which will appear in our next issue.

The PRESIDENT thought Dr. Vachell's paper was so akin to the subject of "Dental Hygiene" that perhaps they had better have Mr. Browne-Mason's paper before there was any discussion.

Mr. BROWNE-MASON then read his paper on "Dental Hygiene," which we hope to publish in our September number.

The PRESIDENT said the papers had been of such great interest he was sure there would be no lack of discussion. Mr. Browne-Mason's paper had followed very much in the direction he (the speaker) had desired when he invited him to read the paper. He felt they owed a duty to the public in the matter of teaching them to understand and preserve their teeth under the best conditions.

The papers were now open for discussion.

Mr. A. SMITH said there was one point in Dr. Vachell's paper which had struck him. It was that in relation to sugar and its action upon the teeth. They were all accustomed to have the question put to them as to whether sugar had a deleterious effect.

Mr. WOOD, of Brighton, had contributed a number of papers to their Journal on the subject. With regard to the question, he said he had seen the mouths of a large number of negroes in the West Indies and found their teeth were abnormally good and that there were no such traces of decay as were generally found in Europe. He thought it would be wise to follow the Baconian method—that was a method of experiment—which was the only true and sound method they could adopt. They knew that Dr. Miller of Berlin, performed experiments upon tens of thousands of teeth in order to ascertain the effects of acids upon them, and he thought before arriving at any definite conclusion a much larger number of experiments would have to be made. He would be loth himself to accept any statement with regard to the action of sugar on the teeth unless he had direct experiment to show that it was the case.

Dr. WALKER said it had been a matter for very great pleasure to him to hear the President's address upon the necessity of educating the public as to the desirability of the dental care of children and adults. The papers seemed to have been dovetailed together, and he would therefore speak upon all at the same time. There was only one remark which Dr. Vachell had made in which he was not quite one with him. He did not think the medical and dental were two professions, he thought they were one. He himself was on two hospital boards and on two hospital staffs, and he took the chair at meetings in turn with surgeons and physicians. Therefore he could not say that he was one profession and they another. Passing that, how could Dr. Vachell help them as a physician? Very much, by stimulating the general public to take an interest in dentistry. He was sure if the physician would only advise every family he attended to place their children under a dentist's care, he would see the benefit to the health of his patients which would accrue from the co-operation of the dentist with the physician. With respect to the effect of sugar on the dental organs he (the speaker) could bear Dr. Vachell's statements out completely. All apprentices to grocers suffered much from dental decay. He lived near a very large grocer, and he attended to his apprentices, and he could

assure the meeting that those boys, who were everlastingly eating sugar, lost nearly all their teeth. He thought that was a practical illustration of the effect of sugar. He would ask further why it was there was so much suffering at the present time from dental disease. He thought it was that the mucous membrane of infants, children and adults was not as healthy as it used to be. It was want of good circulation in the mucous membrane of the mouth. That, he thought, was one of the principal causes of dental caries. As a physician Dr. Vachell might take care of the membrane, and he asked him to go a little further and send his patients to the dentists for them to take care of the bony structures. He took exception very much to Mr. Browne-Mason's proposals with regard to the tooth brush. He did not believe in tooth brushes nor tooth powders, but in sponges and soap. These they could get children to use; they not only were clean but they produced friction of the membrane of the mouth. He believed, if they would adopt this principle and make their patients use sponge and soap night and morning, they would see very much less dental disease. Another thing he believed to be conducive to dental disease was, that when a tooth on one side of the mouth became diseased, that side of the mouth was left idle, the membrane became congested and inflamed, and ill-health ensued. Thus the physician could materially help them by advising people to pay more attention to their teeth.

(To be continued.)

Annual Meeting of the Irish Branch.

THE Annual Meeting of the Irish Branch was held on Saturday afternoon, July 27th, in the Board Room of the Royal College of Surgeons in Ireland, St. Stephen's Green, Dublin, the President, R. H. MOORE, F.R.C.S.I., in the chair. There was a large attendance of members.

The minutes having been read and confirmed, R. T. STACK, M.D., F.R.C.S.I. (Dublin), read a paper on "Dilacerated Teeth," which was illustrated with several specimens of this rare malformation mounted in one of the bottle racks used at the Dublin Meeting of 1888, and also with many lucid diagrams of the various points the author in his paper laid stress upon.

Patrick O'Meehan, L.D.S.I. (Limerick), contributed a paper on "Some Interesting Departures from Normal Dentition,"

which was read in his unavoidable absence by the hon. secretary and which was illustrated by casts. In the absence of the ingenious author there was no discussion.

The Vice-President of the Branch, J. C. CLARKE, L.D.S. (Bel fast), made a communication of "An interesting Case of Fracture of the Lower Jaw," which was upwards of twelve months under treatment, and presented unusual difficulties in making an interdental splint such as described by Kingsley, of New York.

W. BOOTH PEARSALL, F.R.C.S. (Dublin), hon. sec., described and exhibited "A New Form of Sand Moulding Flask," for which he claimed the following advantages over the plan usually followed in the workroom.

(1) Great saving in the amount of metal to be melted, the new form being $1\frac{1}{4}$ lbs. weight as compared with 3 lbs. of the usual method followed.

(2) The advantageous employment of a shallow plaster model saving time in drying and preparation, as well as facilitating the withdrawal of the model from the sand.

(3) The new form of cast is stronger than the one commonly used, and cannot be "cracked" or "split" in ordinary use in swaging.

(4) The new form of zinc or Babbet metal die can be held securely in the jaws of any ordinary workroom vice during the process of filing, trimming, horn-hammering, or chasing, and cannot be knocked out of the jaws of the vice on to the workroom floor or the workman's toes.

(5) The ease with which plates can be struck which require to be highly developed.

(6) The variety and certainty of choice offered to the die maker in placing the strength of the die where it is most needed to resist heavy hammering.

(7) The hammer surface of the die is more easily struck than the usual form, so that the whole force of the blow is used upon the plate.

(8) Simplicity of method, the process being almost the same as that usually employed by dentists, with the exception of the method of forming the swaging end of the die.

R. T. STACK, M.D., F.R.C.S.I. (Dublin), exhibited casts and photographs of a female patient for whom he made a facial restoration for a horrible mutilation caused by a gun-shot wound as well as the ingenious and artistic appliance in daily use by the

patient. The shield employed for restoring the lost parts was made of dental alloy, and was attached to a pair of spectacles, and contained an artificial eye with eyelashes, the malar eminence, and a great part of the nose, and the external metal surface of the shield was painted with oil colours so as to match the colour of the patient's face. The treatment of the case was graphically described, and Dentist Stack was followed through the various stages of his method of procedure by the wrapt attention of the members present.

DANIEL CORBETT, jun., F.R.C.S.I. (Dublin), exhibited and described extremely interesting casts of abnormal jaws.

W. BOOTH PEARSALL, F.R.C.S.I. (Dublin), exhibited new instruments for contouring and finishing plastic fillings, as devised by him for paring and shaping "white" fillings.

W. D. QUINN, L.D.S.I. (Dublin), exhibited two abnormal upper wisdom teeth, having respectively four and five dental roots. The specimens were presented to the museum of the Dental Hospital of Ireland.

W. BOOTH PEARSALL, F.R.C.S.I. (Dublin), exhibited a very large necrosis of the lower jaw involving the angle, which he had, with the assistance of his colleague, Mr. D. Corbett, jun., removed for a country patient, who endured this serious lesion of the jaw without any loss of health, having gone about his daily work as a farm labourer (with the exception of a fortnight in the county infirmary) up to the time of his admittance to the Dental Hospital of Ireland and the removal of the large necrosis.

W. BOOTH PEARSALL, F.R.C.S.I. (Dublin), exhibited "a new oiled pad," a little device for use with "white" fillings, enabling the operator to use the pad with greater convenience than the usual form, and also providing it with a "scraper" with which to remove particles of the filling that sometimes adhere to the packing instruments.

Some of the members dined together in the evening at the Grosvenor Hotel at the termination of the meeting, the President of the Branch, R. H. MOORE, in the chair. The toasts of the "Queen," the "British Dental Association," and "Our Visitors," were heartily given and responded to, and the molar alms-box of the Branch was brought round by the hon. secretary for the aid of the Dental Benevolent Fund, the use of which he had, by some unfortunate oversight, neglected at the Branch Meeting. The result was sent to the treasurer of the fund in London. Thus

fitly closed the best meeting the Irish Branch has yet held, draw together the reputable dentists of the Emerald Isle in kind and professional feeling.

The Benevolent Fund.

THE following new Subscriptions and Donations to the Benevolent Fund of the British Dental Association have been received by the Treasurer since March 1st, 1889 :—

Subscriptions.

Elwood, W. H., 62, Pakenham Place, Dublin Road, Belfast	£1	1
Hope, W. H., Silver Street, Wellingborough	0	10
Hutchinson, S. J., 64, Brook Street, Grosvenor Square		
W. (increased from £1 1s.)	2	2
Rhodes, W. A., 53, Trumpington Street, Cambridge ...	1	1
Sumerling, A., 66, St. Edward Street, Leek, Staffordshire	0	5
Woodhouse, A. J., 1, Hanover Square, W. (increased from		
£2 2s.)	3	3

Donations.

Bartlett, Edward, 38, Connaught Square, W. (in addition		
to Subscription)	£1	1
Bennett, F. J., 28, George Street, Hanover Square, W. (in		
addition to Subscription)	1	1
Sumerling, A., 66, St. Edward Street, Leek, Staffordshire		
(in addition to Subscription)	0	5
Tuck, Richard H., 7, Victoria Place, Haverfordwest ...	1	1
Collected in Box at the April Meeting of the Irish Branch		
of the British Dental Association (per W. Booth		
Pearsall)	1	0
Collected in Box at the July Meeting of the Irish Branch		
of the British Dental Association (per W. Booth		
Pearsall)	1	1
Collected in Box at the Annual Meeting of the Midland		
Counties Branch of the British Dental Association		
(per Dr. W. H. Waite)	10	0
Collected in Box at the Annual Meeting of the Southern		
Counties Branch of the British Dental Association		
(per Morgan Hughes)	3	1
Collected in Box at the Annual Meeting of the Eastern		
Counties Branch of the British Dental Association		
(per W. A. Rhodes)	1	1

Collected in Box at the Annual Meeting of the Scottish	
Branch of the British Dental Association (per W.	
Bowman Macleod)	£2 17 6
Collected in Box at the Annual Meeting of the Western	
Counties Branch of the British Dental Association	
at Cardiff (per J. Browne-Mason)	1 16 8

ORIGINAL COMMUNICATIONS.

Dental Education.

By WALTER HARRISON, D.M.D. Harvard, L.D.S. Eng.

DURING the last year four important questions relating to Dental Education have been brought prominently before our notice, and have not, I think, received the amount of attention from us that they deserve.

The foremost of these was "Reformation in the Dental Departments of General Hospitals," and the establishment of a Dental School at Guy's Hospital Medical School. By the way of introducing this innovation the first prospectus states—"It was felt that the extension of the Dental Department would very materially add to the means already existing of benefiting those who might legitimately seek relief from the Hospital, while the establishment of the Dental School seemed desirable as affording opportunities to dental students of acquiring a knowledge of dentistry at a large general hospital in connection with a well-known school of medicine and surgery. It was thought, moreover, that such an association would tend to induce a greater number of dental students to become qualified surgeons, and thus to raise the position of Dental Surgery."

The special advantages of a dental school at general hospitals are, prevention of loss of time in going from one school to another; greater facilities in watching cases through the wards—unfortunately fractures of the maxillæ generally find their way direct to a general hospital; more inducements to obtain medical qualifications; closer intercourse with general students, and permitting them to become familiar with dental operations and anæsthetics used in our speciality. The administration of the gas is unfortunately a weak point with many medical practitioners.

That a medical school should institute a dental school is a movement we might expect, if we look back and see how the

tendency has been, and rapidly too, to fuse these two professions into one. The College of Dentists' diploma had to give way to the L.D.S., then medical schools were opened to dental students to take general subjects there, and now we are arriving at the point that a full dental course can be obtained at a general school. This scheme at Guy's is simply a little further development of the system pursued at Owens College, University College, Liverpool, Queen's College, Birmingham, &c.

In supporting any new project we must not forget what special dental hospitals have wrought for us in the past, and where should we have been without them? They have done more than any other movement in educating the medical profession and general public. The existence of a special hospital has aroused the thoughts of many to the fact that there is more in dental surgery than they previously supposed. The foundation of the special institution was the stepping-stone to the L.D.S.

Competition among educational bodies cannot help doing good, as preceptors and students will select the college naturally, which presents the most advantageous course of instruction. Whether dental departments of already existing medical schools and charities can be developed to carry out the increasing demand from patients and students, or more special hospitals will have to be created, is early to decide; no doubt now we are firmly established in our speciality, the former is more desirable in the provinces. I am strongly averse to small provincial dental schools.

The subject of examinations has been to the fore. In the *British Dental Association Journal*, December, 1888, in an editorial article, the subject was well discussed, and the strain was adverse to any division. The plan of having two professional tests for the L.D.S. seems to work well at Glasgow and Edinburgh.

The difficulty, according to our present (London) curriculum is what subjects should be taken at the end of the first year, only two are completed, viz., physiology and chemistry. It would not, I think, be imposing too much upon the future dental surgeon if he were compelled to take the first examination in elementary physiology and anatomy of the conjoint Board, in addition to the present one. Many would like to see the second examination in anatomy and physiology included in the L.D.S. course of study, but this could not be done without another year being added, or one year being taken off the already abortive mechanical instruction. To create a five-year curriculum means a good deal to country students.

I am sorry *materia medica* and chemistry are not enforced by examination—they might well be taken at the end of the first year. It also seems a want of advancement that only one school has a chair of operative dental surgery, true, such must be taught practically, but much might be gained at lectures.

The next question I ask for your kind indulgence is mechanical pupilage at a dental school. Much more might be done to make students more proficient in this branch before they pass out as dental surgeons, and although we hope to see the requirements in this branch grow less, but the standard of work higher—I think it was Mr. Smith Turner who made the wise remark, “where the one leaves off the other begins.”

I fail to see that so complete a training can be given at a hospital, as by private pupilage one of two things seems to present itself—the instruction will be limited to the less costly materials and lower standard of work, or the wrong class of patients will be benefited by the system.

It is a great pity that after three years' pupilage—that greater part of the curriculum—there is no test as to the ability of the student before or after his hospital course.

Opinion is divided as to what the limitations of mechanical instruction are, whether simply attendance in the laboratory, with practical tuition, or whether the pupil should have the opportunity of seeing models and bites taken, and general adjustments and cases fitted; it does seem desirable that the present system should be elaborated. The Edinburgh School has taken the matter in hand, and intends to institute a thorough course in dental mechanics.

Why registered surgeons should only be required to devote two years' study to mechanical dentistry I am unable to conceive, seeing nothing in their curriculum tends in this direction.

What our desire should be is to lay down a course of instruction and study which shall be thorough, occupying as little time as possible consistent with what is taught, and to cost the aspirant the lowest possible sum. The examinations should be very searching. I am sure if too many burdens are laid upon candidates for our diploma it will tend to develop illegitimate practice and practitioners. Offer every inducement to the more extensive course of medical education, but let it be voluntary and not compulsory. There is really very little fault to find with our present curriculum. The only alterations I desire to see are a test

of mechanical skill ; chemistry, and materia medica represented on the examining board ; the examination in operative dental surgery more extended and not limited to a case or two ; periodical examinations at the school before presentation at the R.C.S. be instituted in this subject ; the student to pass all satisfactorily before being "signed up."

The number of gold fillings at the various dental schools much lower than it ought to be, owing to the present arrangement. In March this year the returns of the following institutions were :—

		Number of Patients.*	Gold Fillings.	Average Daily Attendance Students.
London Dental Hospital	...	—	454	47
National „ „	...	2072	152	16
Manchester (Victoria) „	...	986	58	10
Birmingham Dental „	..	474	8	4

The number of fillings done by a student is no criterion of his ability.

Closely allied with dental education comes the question of payment of fees by patients. This matter will shortly need our careful attention. The system is finding favour in many quarters, and to make some definite regulations in this direction would be a great boon to students.

There will always be the argument of the undeserving class abusing the institutions and receiving the benefits when they are in a position to pay, in some instances, a fair fee. I have never yet heard any satisfactory remedy to this horrible shabbiness. The provident system is perhaps the nearest approach to a settlement of the problem.

"Recently an effort has been made to interest the working classes more largely in the London hospitals, and with this object a combined meeting of the Federation of Working Men's Social Clubs and of the Club and Institute Union was held at the Cannon Street Hotel, presided over by the Marquis of Lorne. While admitting the good work done by the institutions, the general opinion of the meeting seemed to be that the labouring classes did not under the present *régime* derive such benefit from them as was intended by those who endowed and supported them. It was suggested that, in place of the letter system now in vogue

* Inserted since reading paper.—W. H.

the working classes should directly, or through clubs and factories, contribute regularly small sums, which should entitle them to medical aid, and by thus supporting the hospitals they might lay claim to representation on the governing bodies. The meeting was also in favour of the establishment of more provident dispensaries. Resolutions to this effect were adopted."

Unfortunately this, the representative association of the profession, has no voice in the questions of education examinations or registration. We ought to *agitate* till we get direct representation on the Medical Council and various Colleges of Surgeons.

For discussion see page 461.

An Improved Method of Crowning Roots.*

By R. P. LENNOX.

IN pivoting a tooth after the manner of the accompanying specimens, the root is prepared and the apex sealed in the usual way, care being taken not to make the canal larger than ordinary pivot wire until after the cast is taken. A cast is now taken of the mouth and a canal drilled into it to correspond with the root canal, the direction of which may be obtained with sufficient accuracy by observation merely, no special tray being necessary. An opening is also made in the front of the cast about a quarter of an inch from the edge of the root so as to meet this canal. The purpose of this opening will appear later.

An ordinary flat tooth of suitable size and colour is now ground to the model, and a back prepared for it in such a manner that when the tooth and back are placed in position upon the model, the back will exactly cover the centre of the root canal. The tooth and backing are then waxed to the model from the front, and a strip of very thin plate, rather broader than the tooth is deep, is bent round into a band to fit the root and backing. This band is next soldered to the backing in such a way that its extra width leaves a certain trifling margin at the lower edge, by the cutting away of which the tooth and band can be let down on to the model like an ordinary tube tooth. This being done, the upper edge of the band is next clipped and filed to the shape desired. A pin, which is best made of platinum wire, is next prepared, and

* Read at the Annual Meeting of the Eastern Counties Branch, held at Colchester, June, 1889.

a slot sawn in it lengthwise from the end which is to be outermost in such a manner that, when the pin is in position in the cast, and the tooth and band are applied, the backing of the tooth will slide readily into the slot in the pin, which may, of course, be bent a little, if necessary.

This adjustment being made, the tooth is removed from the cast with the pin in position on the backing and the two are then soldered together. In making this removal, it is obviously necessary not to disturb the position of the pin, and the opening made through to the canal from the front of the cast will enable the removal to be made with the desired result. Lastly, a groove is filed in that side of the pin which will ultimately lie towards the inside of the mouth. The whole is then finished in the usual way and annealed, but not boiled in pickle, because the mercury of the copper amalgam to be afterwards used in the mouth will not act so readily upon oxidised solder. As a further precaution, the soldered parts may be coated with copal or shell varnish. A trial is now made to see that the position is right and the flat tooth is permanently attached to the backing merely bending the pins.

The whole is now ready to be applied to the mouth. To do this, place some soft copper amalgam under the front part of the tooth and press the tooth into position on the root. On the tooth being withdrawn, the amalgam will be found adhering to the tooth. Some suitable white stopping is now put into the canal and the tooth again pressed firmly into place. Then the white stopping is packed nicely round the pin and all that is superfluous is carefully removed. Finally the band is filled up with copper amalgam by taking a very small quantity of soft to begin with, and packing it with a small piece of amadou, then squeezing the remainder into the band with the amadou, and finishing with the amadou. The work is now complete.

The advantages of the method lie in the simplicity of the work and the accuracy of the fit, arising from the ease with which the necessary adjustment can be made and the accessibility of the white stopping up to the moment when, everything being satisfactorily placed, the tooth is finally built up with amalgam, which in its turn effectually protects the root and the white stopping from moisture.

Further, the flat tooth being fastened to the backing merely by bending the pins is readily replaced in the event of a fracture.

lastly, there is the advantage that the white stopping sets with a rapidity about the pin, which is already immovably attached to the tooth that the patient is able to leave the surgery with the work firmly rooted in his mouth.

REPORTS OF SOCIETIES AND OTHER MEETINGS.

Edinburgh Dental Hospital and School.

On Monday, the 22nd of July, the presentation of prizes in connection with the Edinburgh Dental Hospital and School was held at No. 5, Lauriston Lane, Dr. Joseph Bell, President of the Royal College of Surgeons, in the chair. The report of the Session 1888-9, which was read by Mr. W. Bowman Macleod, F.R.S., commented at the outset on the success which continued to accompany the Dental School since its migration to the premises in Lauriston Lane—premises which after three months' trial were found to be excellently well adapted for the purposes in view. The number of students entered in November, 1888, and May, 1889, was in excess of those of the previous year, and the prospects for the coming winter were bright and cheering. The attendance of the students had been regular. Not only had the seniors and juniors done well in their own special departments, but they had come well to the front in the contests for honours among their fellows in the medical classes. The senior prize for hospital practice had been won by Mr. Fred Bonnalie, Mr. Douglas Shepherd taking second place and a certificate; whilst in the junior division Mr. John T. Jamieson secured the medal, and Mr. Murray Thomson the second prize and a certificate. For the systematic courses the prize-winners were:—Dental anatomy and physiology, Alfred Donagan; Dental surgery and pathology, first, J. D. Watt, and second, L. S. Hannan; and dental mechanics, Andrew K. Brittain. After having presented the prizes to the successful students, the Chairman delivered a brief address. As one of the managers of the Dental Infirmary, and one who took a prominent part in pressing on other managers to provide those new premises for the Dental School, he was exceedingly thankful to find that the removal had been attended with such success. He could assure them that the managers of the Royal Infirmary were very anxious to affiliate

this great dental school to the medical school of Edinburgh because the more they could affiliate the branches of their great school in the city the better for the school itself and for all connected with it. He was extremely glad to hear of the success which had attended the dental students in the general medical classes, and heartily congratulated them on that success. Proceeding, Dr. Bell said he had a theory that, if it were at all possible, the dentist ought to be a medical or a surgical specialist—if possible a surgeon first, and a dentist afterwards. He did not know whether they should ever attain this, but his idea was that they might affiliate the L.D.S.'s of the College of Surgeons in some way by giving them a modified license from the College, requiring not too much knowledge of medicine, but requiring that they should be experts in the practice and in the principles of surgery because, after all, dentistry and dental surgery were only a branch of the great subject of surgery, and the more surgery the dentist knew the better for himself. He was not without hopes that some plan might be devised whereby the L.D.S. who had been made L.R.C.S. might afterwards, if he chose, take by examination the high and valuable diploma of F.R.C.S. On the motion of Mr. W. Bowman Macleod, L.D.S., Dr. Bell was awarded a cordial vote of thanks for attending and distributing the prizes.

MINOR NOTICES AND CRITICAL ABSTRACTS.

Proposed Public Medical Service of England.

By ROBERT R. RENTOUL, M.D.

OBJECT.

THE providing of medical treatment for those wage earners who are making from 20s. to 45s. per week for the entire family, their making small immediate payments, of 2s. for the first visit and 1s. for subsequent visits during the same illness, or 4s. a week, paid in advance, for five visits. [Such a scheme would include those in domestic service, shop and factory hands, school clerks, mechanics, and small shopkeepers, these being the classes who generally frequent and overcrowd the out-patient department of the medical charities. It will not arrange for the providing of medical treatment at the homes of wage earners.]

PROPOSED RULES.

1. That each town or city be divided into as many districts as necessary, a branch being established in each. The rent of the branch to vary from £2

per annum, and the branch to be situated in the locality in which the patients live.

That each branch staff consist of three to six medical practitioners and a dental surgeon. Medical and dental staff to be registered. No unqualified person to be engaged to assist or to act as *locum tenens*. Each practitioner to practice in so far as he wishes, that branch of his profession which he may select, to arrange the days and hours on which he will treat patients at the branch. A practitioner to take the fees paid to him by the patient, but in cases of consultations the doctors to arrange beforehand to assist each other, and at a certain division of the fees paid in this case. No practitioner who keeps an open branch dispensary, or an unqualified assistant, to be eligible to serve on the Association. Practitioners who have resided in the locality for two years to be eligible to serve.

The rates and taxes and other expenses of the branch to be defrayed by an equal levy on the medical staff, but no expenditure to be incurred without the consent of two-thirds of the staff.

That the registered chemists in the vicinity of each branch supply medicine to the patients at the rate of 4d. for each prescription, this sum to be paid to the chemist by the patient when the prescription is left to be dispensed. A prescription to be dispensed a second time by the chemist unless the patient has been advised again by his doctor. Prescriptions to be retained and stamped and dated by the chemist. Standard mixtures, their formulæ arranged by the medical staff along with the chemists, to be prescribed, or as is consistent with the right treatment of the patient. No prescriptions to be copied by the chemist into his books. No drugs to be dispensed by the medical staff either at the branch or at their homes to the branch patients. The medical staff not to use any influence with patients so as to induce them to go to any particular chemist, but each patient to select whom he wishes, or that whom who has recommended him to seek advice. Chemists to have the right to refuse to dispense a prescription on more than one occasion, if they believe that the patient so prescribed for is above the 45s. "wage limit," and until they discuss the matter with the doctor who has prescribed, and to arrange accordingly. [Such a plan is now carried out by many doctors who have clubs, and those who act as surgeons to post office officials. It would also save the cost of drugs and dispenser to the service, and by gaining the co-operation of chemists would do away with what is known as "counter prescribing," or "prescribing chemists." The sum paid for drugs at 119 London hospitals in 1895 was £48,974, while at Liverpool eighteen hospitals spent £6,655.]

That the medical staff of each branch possess the right to refuse treatment to any who they know are making over the 45s. "wage limit," and further, each doctor has the right to remonstrate with his *confrères* when he knows a patient is receiving treatment who is above the "wage limit." And each practitioner has the right to tell patients to come to his house in cases where any special examination, as of the eye, ear, or throat, &c., is required, provided always that the patient is charged the Service fee.

That the fee for vaccination with human lymph be 2s. 6d., and with calf lymph 3s. 6d.; including the filling up of certificate. No death certificates to be charged for. Certificates with examination to be 2s., and ordinary sick club certificates 1s. No death certificates to be granted unless the patient has been attended within twenty-four hours by the doctor.

That registered dental surgeons be asked to co-operate, and that they arrange the days and hours on which they treat patients, and that patients be treated at the dentist's residence. That the scale of immediate payments be : Extractions, 1s., and each extra tooth 6d. Extractions under gas 2s. 6d., and extra tooth 6d. Extractions under ether or chloroform, 12s. 6d. Stopping with amalgam, 2s. per tooth. Stopping with gold, 4s. per tooth. Artificial tooth on vulcanite plate, 4s. 6d., and every extra tooth 2s. Immediate payments to be made by the patients to the dental surgeon.

That the fee for surgical operations performed at the branch—the opera-

tions being of the class usually done at the out-patient departments of medical charities—be not less than 10s. or more than £1 1s. (anæsthetic included), and that this fee do not cover the subsequent visits made for dressings or advice.

9. Patients to have the right to complain to the branch committee, and further, to the central board. Complaints to be made in writing, and not more than six days after the alleged irregularity.

CONSTITUTION.

A Central Board for each city, or town, to be composed of one medical practitioner, one dental surgeon, and one chemist from each Branch—each elected by the Branch Committee—to have supreme control. This Central Board to elect twelve public laymen who take an interest in provident and thrift subjects, these being eligible for re-election each year. The Board to hold quarterly and annual meetings. Application to be made by not less than three medical practitioners, not in partnership, to the board when they wish to form a new branch. No one to use the title "Public Medical Service" without the written permission of the central board. Each Branch to have a committee composed of the medical and dental staff, and a number of chemists equal in number to the medical staff. This committee to meet monthly or quarterly to discuss matters affecting the welfare of the branch, and to elect one doctor, one dentist, and one chemist, to represent the branch on the Central Board. No Branch to alter, or add to, any rules passed by the board. Proposed alterations to be sent in six weeks before the annual meeting. No branch to in any way canvass for patients, to distribute handbills, or to have any printed material on the branch other than a small brass plate on the entrance door, with the name of the service and of the branch on it. Each Branch to fill up vacancies occurring in the medical and dental staff.

Proposed Form of Patient's Card.—Book to be cardboard, 4 inches by 3 inches. On front page: "Public Medical Service of England;" name of Branch, address; name of doctor, and hours; "Always bring this book with you." On back page: List of medical and dental staff, with address and hours of each; latter; scale of fees; rules referring to patients. Two inside pages: No.; name and address of patient; names and addresses of chemists; space for prescriptions.

[Each Branch may have a man and wife to reside there, the latter to be a matron: these to occupy rent free. It will be easy to obtain the services of a retired midwifery nurse or a pensioner and his wife.]

HOSPITAL CO-OPERATION WITH THE PUBLIC MEDICAL SERVICE.

It is absolutely necessary for the success of this Service that the authorities of the medical charities co-operate. No connection whatever shall exist between the two in so far as referring patients to the charities for treatment, or using them for teaching purposes. It is concerned, for the patients of the Service are in no way eligible for charitable relief; and further, no honorary subscription to public collections shall be taken up to aid the Service, it being understood that it is entirely self-supporting.

Hospital co-operation must exist, as in no case yet reported has a Pay or Provident Service been known to succeed when it had to compete against a free hospital at which all classes were treated. The different plans of hospital co-operation have been noticed by me in the Journal. The main features of it are:

That hospital committees meet and fix a "poverty scale," and so decide who are eligible for charitable medical aid. My suggestion is that out-patient

be refused when man and wife make over 25s. per week ; single man or woman, 20s. ; each child of family, 1s. 6d. That no one be refused first treatment, but that second attendances be refused unless the patient has his "card" signed by an official appointed to inquire into his social circumstances. The patient to state on a printed form : Name ; age ; address ; occupation ; name of employer ; amount of weekly wage ; married or single ; number of children ; in or out of employment ; receipt of outdoor relief.

The social circumstances of the patients may be inquired into in one of two well-known ways ; first, by having a waiting-hall inspector, paid and appointed by the hospital, as is done at St. Bartholomew's and the London Hospital ; secondly, by using the Manchester system, where each hospital sends a list of patients with their addresses to the Charity Organisation Society, whose inspectors inquire into the social conditions of applicants, and will not refuse to stamp the hospital card of the patients if they are satisfied. In carrying over their "poverty scale," the hospital authorities also consider the possibility of giving further treatment.

It has lately been shown* that the abuse rate at the out-patient departments of hospitals—taking the above "poverty-scale" as a basis—is about 50 per cent. of the whole. Allowing 5 per cent. of these abuse cases to be above the 45s. limit and so able to pay the usual medical fees, 95 per cent. would be available for the Public Medical Service. I have lately pointed out† that, during the year 1889, 130 London hospitals treated 1,179,661 out-patients ; that 18 Liverpool hospitals treated 244,831 out-patients ; and that 12 Glasgow charities, according to the statement of Dr. J. Erskine,‡ treated 72,217 out-patients. These numbers put together give a total of 1,496,709 out-patients treated in only three cities. 50 per cent. of this total (748,354) were refused treatment at the charities, this would give 710,926 persons for the Public Medical Service, after deducting the 5 per cent. (37,417) who would be rendered ineligible owing to the 45s. limit. Supposing the number refused in 30 other large towns could be added on, can it not readily be seen what a fine Service may be created if only some combination and organisation? Let us see if it be true that the dental profession is incapable of organising.

THE PUBLIC MEDICAL SERVICE NOT COMPLETE AS FAR AS SUPPLYING THE ENTIRE MEDICAL WANTS OF THE WAGE-EARNING CLASSES.

This proposed Public Medical Service does not make any arrangements for providing medical treatment for patients at their homes. It is based on the knowledge that the out-patient departments of our hospitals are overcrowded, and by a class who can have no difficulty in paying small immediate fees, and also on the knowledge that they are unable to pay the usual medical fee of 3s. 6d. per visit, and 1s. 8d. for a bottle of medicine. The first statement is shown to be true by the figures given by me in the *Journal* for January 2nd, 1889, where it is stated that the sum paid by out-patients at seventy-two charities was £36,334. By having a system of small immediate payments the great expenses of book-keeping, printing out of accounts, postage, payment of collector, bad debts,

Journal, May 25th, 1889. †*Journal*, February 2nd, 1889. ‡*Glasgow Med. Journal*, 1886.

and county court will be prevented, and with the result that wage-earners, by thus reducing the expenses of management, will be able to obtain skilled medical treatment for a smaller fee than they could otherwise.

The Public Medical Service, with hospital co-operation, will therefore provide treatment for those who are sufficiently strong in body to go to the branch. If, however, a scheme is to be as perfect as possible, provision should be made for those who are too ill to leave their homes. This can be done by establishing publicly managed and well-conducted Provident Societies. Unfortunately, the "provident dispensary" system has never had a fair trial, owing to the wild competition for patients existing between it and the free hospitals. Moreover, the expenses of a provident dispensary are so great that the small payments made by the members during health and sickness are altogether unable to cover them. Rent and taxes, coal and gas, drugs, printing and stationery, furniture, wages of dispenser and collector, swallow up all the members' payments, and with the result that this provident scheme turns out to be, in so far as the medical staff is concerned, a charity. Dr. Stewart, of Manchester, in the *Glasgow Medical Journal*, 1884, has given his experience of two years' work in the provident dispensary there, and finds that for 12,096 night and day visits he was paid at the rate of 4·716d. per visit. The skilled mechanic claims over 10d. per hour and extra pay for work over time! In the *Journal* for January 18th, 1887, I have collected statistics of eighty-eight provident dispensaries, having a membership of 293,720. But these, I find, pay their doctors on an average 4½d. per visit. This "rate of remuneration" is absurd, and, rightly, medical men refuse to sanction such, saying, that if they give their services, they would prefer to present them as a charity rather than allow well-to-do wage-earners to pretend they were paying for what they received. There is really no further necessity for medical men to start another plan of charitable medical relief. The limit of unpaid medical services has, as Dr. Fairlie Clarke said in 1875, been reached, and it is the duty of medical practitioners to avoid being taunted with the statement that, next to the poor-law, their profession is the greatest pauperising agency in the country. What a pity it is that each young medical practitioner, who, "seeing how destitute his neighbourhood is of the means of providing the poor with skilled medical aid, has resolved, with the aid of some Christian friends, to establish a hospital," and so on, had not turned his mind to provident and thrift subjects. May we benefit by the mistakes of the past! Dr. Stewart asks—and we should answer—the very pertinent question, "Is there any virtue in giving an article to a man for less than its real or market value when he is able to pay

full value for it?" In order, therefore, that a provident scheme may be worthy of the name, it must have honorary subscribers—that is, unless the medical staff agree to work for well-to-do people for nothing. Perhaps the plan followed in Germany, where there is compulsory insurance against sickness, accident, and old age, is the best. There the employer is made to pay a sum equal to half the amount paid by the *employé*. There must also be a sliding scale of payments for infants, children, adults, old people, and chronic invalids; while the rule giving a member the right to demand "immediate treatment" by the payment of 5s. or 10s. must be abolished, it being entirely foreign and most injurious to any insurance scheme. Again, the rule which states that not more than four children of a family are to be charged for, the remainder being treated free—that is, as charity cases—is absurd, as it gives about 13 per cent. of the whole number the right to receive without paying. It is a pity that the provident system had not been started on a fair working basis; but it is to be remembered that it has had to compete against the fearful odds offered by the free hospitals. In principle it is perfect, and no doubt, if the Public Medical Service could secure hospital co-operation, it will have to fight against those hospitals which charge from 1d. to 2d. per visit, and will accordingly be able to charge similar fees.

claim, if the above schemes were carried out :—

That a great strain would be taken off the funds of our medical charities if they ceased to provide medical aid for those who are well able to pay for it.

The genuine sick poor would then receive proper attention, instead of, as now, being driven back on the poor-law. The present gross abuses of our hospitals are slowly stifling charitable feelings, and if these go on the public will take as little interest in them as they now do in the parish infirmaries. There is little use in saying that wage-earners as a body are unable to pay the fees of a public medical service, for even in the East End of London, Mr. Booth has lately shown that out of its population of 908,958, 577,000, or 65 per cent., "are classes in comfort and rising to affluence."

That the tone and manly feelings of wage-earners would be increased, and they will be encouraged in the way of self-help and self-respect. These feelings are being gradually undermined owing to the poor-law, medical charities, and other forms of relief, while the degradation of character due to feeling of dependence on the charity of others is working enormous evil. No doubt many wage-earners hold that it is the duty of their employers to provide them with medical treatment and medicine; hence not looking on this provision of aid as a charity, but as a right, no feelings of gratitude are created. If free treatment is given to all at the hospitals, then the greatest incentives to frugality, sobriety, and independence are withdrawn. I think it is no exaggeration to say that on the happiness, welfare, and contentment of the working classes of England depend, to a great extent, the prosperity of the country. There is, or should be, in every one of us a feeling which perhaps may be described as the "necessity of providing," and the person who either actively or passively hinders the progress of this incentive, either for the purpose of getting himself into prominence or notoriety, or for the purpose of keeping the working classes, is an enemy. Christian almsgiving is a religious duty, but only when the recipient is worthy of relief. When given to others it does evil, for it is found in all instances that pauperism, or a dependence on

the frugality and work of others, increases in direct proportion to the funds provided for the indolent. The statistics of our medical charities show, like those of the poor-law, that this dependence of the wage-earner on the charities of others is largely a preventable disease. Perhaps when some *soi-disant* philanthropist succeeds in demoralising and debasing the wage-earners, by doling out just as much charity as bring the givers into notoriety, to a low level of servility and dependence, the public will put a stop to what might be termed "trading in hospitals." The demand for charitable aid by the well-to-do is mainly due to the encouragement it receives—it grows by what it feeds on. This is an unpleasant fact, but it had better be grasped at once. A short time ago a guardian asked a man who was making 52s. a week, but who was spending all he made, "What will you do when old age comes?" "I'll do as my father did—go to the workhouse." "I'll go to the hospital" seems to be the outcome of the present-day teaching.

3. The happy and old-fashioned doctrine of "live and let live" among the public, medical practitioners, and chemists would be encouraged. It is useless for the wage-earner to say that because he gives his penny for his bottle of medicine, or drops it into the hospital Saturday box, he is paying for what he gets, while all the time he does not pay the doctor who treats him at the hospital. He is, therefore, a pure charity case in so far as the doctor is concerned. This point cannot be too prominently dwelt upon, more especially as the wage-earner now often says, "I pay for what I receive." It is well known that the demands now made upon the services of doctors are far too great, and that the average payment for services is too small. If a public medical service had anything to do with true medical charity, one would not speak on this subject of payments. Further, it may be said, perhaps, that this service is for the benefit of doctors. Well, if it be so, why deny it? Do merchants and other business men not combine together to offer their services for a certain sum only with this very great difference, that members of the medical profession try to make their charges harmonise with the social conditions of their patients.

No doubt the above proposals will meet with some opposition, but this will just be the amount of resistance required to call forth a little extra exertion on the part of its sympathisers. A final acceptance must take place, else the springs of charity will be dried up. I would appeal to those of the clergy who advocate the virtue of giving to impress on their hearers that it is no charity to provide the well-to-do with that which they can easily obtain by their own efforts and at their own expense, but to tell them that it is not right of them to steal the funds provided for the aid of the poor.

A large and ever-growing number of medical men are determined that the time has come when an effort must be made. Sir Spence Wells, Sir Charles Trevelyan, Messrs. T. Holmes, Fairlie Clarke, Ernest Hart, and Ogle, the Charity Organisation Society, and many others, have given their best time and attention to constructing a plan by which skilled treatment may be provided for the wage-earning classes. It is to be hoped that the young generation may prove themselves capable of carrying out many of their suggestions, and show that they are able and willing to take their place in discussing and carrying out a plan which, if thoroughly worked out, must reflect credit on the medical profession, and at the same time—by relieving our medical charities of the treating of a class of the community far above the scope of charity—to make room for the

ised poor, while they help to raise the wage-earner into a more independent position. Besides, the daily Press has now come to our aid, and has plainly said that a Royal Commission is urgently needed to bring us into the present disorganised condition of the hospitals. A number of practitioners acting on hospital staffs will oppose all efforts to restrict the giving of charity to all, as they hope that, the payment being introduced, they will receive wages for work done by them.

But in Birmingham, at the General Hospital, where four assistant doctors are paid £100 among them, £5,000 are made out of the patients they treat at the charity by selling tickets at 3s. 6d. These giving six weeks' treatment to each well-to-do pauper. The very low fees made in practice are vastly higher than those paid to the hospital staff.

Now, may I be permitted to say that this is not a charity problem, and, therefore, business-like remarks are alone called for. Every class will oppose this scheme. Some time ago a merchant said to me: "You see, our workers are paid from 30s. to 37s. a week. It is most essential that they work regularly, and, therefore, it is in my interest that the men are healthy; and, further, when ill they receive medical aid. These men say it is my duty to provide doctors for them. I do this in the cheapest way, namely, by giving half a sovereign to Hospital Sunday Fund, or by sending them to a hospital. If the doctors choose to treat these men, they are well able to pay, as charity cases, that is not my business. I deal in the cheapest market." This is an honest statement, and represents the feelings of more than half who subscribe. The medical profession do not wake up, and show the public that they are quite capable of forming and developing a scheme by which the working classes may obtain "fair treatment for a reasonable fee," then one of two things are likely to happen. Either the charitable societies will take it up as a business matter, or the Government will step in—as has been done in Canada and Shanghai—pass a law compelling medical men to give their services for a reasonable fee.*—*British Medical Journal*.

OBITUARY.

Charles Spence Bate, F.R.S., L.D.S.

WE have this month to report sad news which is probably very familiar to most of our readers, namely, the death of one of the most distinguished of our members—Mr. Spence Bate, of Exmouth. It is not often our profession has to lament the

Rentoul will be pleased to send his pamphlet, which goes fully into the subject, to anyone interested in the subject.

loss of a member whose services to science have won for him the blue riband of the scientific world—the fellowship of the Royal Society. The members of the dental profession who have attained this dignity may almost be numbered on the fingers of one hand; neither is it often that we have to record the death of a dentist who, at an advanced age, after a life of continuous manual and mental labour, has died in harness. In this case both these claims to our respect were present. Mr. Spence Bate was at the moment of the last unfavourable turn in his illness looking forward to a speedy return to his active duties; he had only just completed a literary labour that will probably remain for many years a classic in his special branch of zoology, and during the last few days wrote to apologise for his enforced absence from the meeting of the British Dental Association. One of the not least attractive features in the character of our old friend and staunch fellow worker was his readiness to appreciate any evidence of talent among the younger generation; he was always the young man's friend. Mr. Bate died on the 29th of July.

Mr. Bate's unceasing energy did not content itself with science or with dentistry; he possessed no mean skill with the brush, and his artistic productions have figured on the walls of many exhibitions—in fact, he was an active member of the Plymouth Fine Art Society.

His work in dental reform was like all his work—thorough, conscientious, and persistent, and his loss will cast a shade over the proceedings of the Association which he so loved and so faithfully served.

Next month we hope to give some further details respecting Mr. Bate.

ANNOTATIONS.

WE are desired by Mr. George Parkinson (Hon. Secretary of the Benevolent Fund) to state that the Committee of the Benevolent Fund of the British Dental Association, after a lapse of five years, find it necessary to amend some of the rules of the Benevolent Fund, and according to rules XXVI. and XXVII. beg to inform the subscribers and contributors to the Fund that this business will be brought before their notice at the Annual General Meeting of the Association at Brighton, on Friday morning, the 23rd of August.

a.m. According to rule X., two members of the Committee of Management will retire by seniority, and the names of gentlemen eligible for election will be submitted to the subscribers and contributors for selection to fill the two vacancies. The Committee earnestly hope that the contributors and subscribers to the Fund will find it convenient to attend the meeting.

THE following demonstration—the notification of which was late for the programme, has been promised for the Annual Meeting:—Messrs. Jones and Lennox, Cambridge, will fill an approximal cavity in an upper canine by aid of the Thomas and Lennox pneumatic mallet, and insert a bridge carrying four teeth, two centrals and two laterals, and the lateral roots to carry the bridge.

OUR readers will be pleased to learn that the exhibits at the forthcoming show promise well. Messrs. Ash, the Dental Manufacturing Company, Messrs. Barth, Coxeter, Jamieson, Rutterford, Blenkin, Collinson, Collins and Hallam will be represented, and the S. S. White Dental Manufacturing Company have sent a very elegant set of crowns, mounted, and instruments for applying them.

ON another page we print some details of a scheme, conceived by Mr. Rintoul, to deal with what is, we fear, a growing evil, namely, the abuse of our great medical charities. The privileges which are offered to the suffering poor by the combined action of the lay public who contribute their offering of money with no selfish hand, and the profession who ungrudgingly sacrifice their time and skill and not unfrequently their money also in the same cause, are often shamefully abused; this is universally allowed. No one will deny for a moment that reform of some sort is urgently called for, and the only practical dangers are that the Government should in some manner render the door of relief difficult of access to the *bonâ fide* sufferer, or that it should, while securing the *bonâ fide* sufferer certain and speedy relief, open the doors of charity to those who are really able to pay. The scheme under discussion seems carefully thought out from both points of view; at the same time we must not place too implicit reliance upon the statistics, least of all upon inland revenue statistics. It does not seem that all people who claim an exemption from income-tax and are receiving less than £150 per annum are unable to pay the

modest fees demanded by the average young practitioner, and would be a gross injustice to the latter to include as objects of a scheme of charity persons who would and ought, in the ordinary course of events, to become his patients. The subject will very probably be discussed at the Annual Meeting, when, no doubt, the scale of charges will undergo some modifications.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.—During the July sittings of the examiners, the following gentlemen passed the First Professional Examination for the License in Dental Surgery: John M'Laren Mason, Edinburgh, and Arthur Sherwood Anderson, Edinburgh; and the following gentlemen passed the Final Examination, and were admitted L.D.S., Edinburgh: Charles William Stuart Wilde, Liverpool; Thomas Gregory, Edinburgh; William Graham Campbell, Dundee; Charles Henry James Acheson, Canada; John Henry Cormack, Edinburgh; James Seymour Allen, Ripley; Walter Graham Routledge, Exeter; Alfred Elliott Smith, Norwich; Lawson Storrow Shennan, Houghton-le-Spring; and Frederick Leonard Floyd Masters, Huddersfield.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following gentlemen have been admitted Licentiates in Dental Surgery to the College, viz.:—F. E. Garner, Bradford, Yorkshire; T. Howkins, Guernsey; E. Mawer, High Wycombe, Buckinghamshire; W. D. Quinn, Dublin; F. Sheppard, Hastings; and C. J. Williams, Croydon.

FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At the July sittings of the Dental Board the following gentlemen were admitted Licentiates in Dental Surgery:—Wm. J. Royal, Warrington; Frank P. Nattrass, Nottingham; William Wallace, M.B., C.M., Glasgow; Augustus Berkley, Brighton; John Biggs, Glasgow; William Geikie, Oxford.

WE are pleased to learn that MM. Dubois and Godon, and possibly some other officers of the forthcoming International Dental Congress at Paris intend to be present at Brighton as a special deputation to explain the details of the meeting, and use every endeavour to secure a good contingent of visitors from this country. We are assured that good rooms, attendance, breakfast, &c., can be had for six francs per day, and a dinner for three francs more. This need not alarm the most cautious. C

word anent the coming Congress; there are rumours floating in the air that an attempt will be made to make an annual affair of it. I sincerely trust that the attempt will not be made, and if it is made that it will fail completely, seeing that its success would only involve severance from the International Medical Congress, and it is important that an early and emphatic protest should be registered against this ill-advised scheme.

MISS MARGARET PEARSE, a distinguished lady student at the Edinburgh Medical School, has just entered upon a three months' course of instruction at the Edinburgh Dental School, in order to make herself more useful in Zenana work.

The Electrical Exhibition is to be held at Edinburgh in 1890, in which a special section will be set aside for the display of dental and dental electrical appliances.

BIRTH.

ANDREW—August 7th, at Orlock Cottage, Groomsport, the wife of J. J. Andrew, of Belgravia, Belfast, prematurely, of a son.

DEATH.

ANDREW—August 8th, at Orlock Cottage, Groomsport, of puerperal convulsions, Hettie, dearly-beloved wife of J. J. Andrew, Belgravia, Belfast.

The two advertisements as above appeared in the Belfast paper Friday last. Mr. Andrew has, we are sure, the fullest sympathy of our members in his affliction.

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our Correspondents.

Dental Education.

THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—The apology Mr. George Campion was good enough to send me I accepted in the spirit in which it was sent.

Nevertheless, I am not the Hospital, and beg emphatically to repeat the protest made in your issue of June 15 against the circulation either by print or by word of mouth of reports to the discredit of the Dental Hospital of London and its school.

*The Dental Hospital of London,
Leicester Square, W.C.,*

THE DEAN.

July 25th, 1889

Continuous Gum Work.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION"

SIR,—The paper by Mr. Simms has given rise to a correspondence to which it is for many reasons desirable that I should reply publicly. Some ten years ago I made a furnace specially for continuous gum work but very speedily withdrew it, for the simple reason that most purchasers expected me to teach them the process, and required so much time devoting to lengthy explanations of their failures, that I could not possibly spare the time necessary for the purpose. Very few furnaces were sent out, and I should have been better pleased if none had been made. I have no doubt that Mr. Verrier and others, who have devoted their time and money to this object, have done so at a considerable loss to themselves. Mr. Crapper praises the results obtained with coke furnaces, but no doubt this is entirely owing to the steady "soaking" heat which is obtained, as against the sudden heat of a quick working which is considered so desirable in a gas furnace, which for porcelain work is so very objectionable. There is no doubt that the hot blast arrangement of Messrs. Simms and Houghton saves a small percentage of gas, but this is so trifling as to be not worth consideration, in the face of the fact that the labour of blowing is much increased. Their recommendation of the hot blast is based on erroneous grounds, as they have evidently an idea that the required temperature is difficult to obtain. This is quite a mistake. I designed Mr. Verrier's burner to do certain specific work, and the burner satisfied his requirements; it would have been just as easy to supply a burner of twice, or ten times the power. In this matter there is not the slightest difficulty, and as a cold blast burner is far simpler and cheaper than a hot blast, and requires also less blowing power, saving of a possible farthing per case in gas is not worth consideration. As regards the speed of working, this simply means unsound work; internal strains set up by the higher external temperature are prone to result in "crazing" within a very short period, and a greater liability to imperfect work when it comes out of the muffle.

As regards the furnace itself there is no difficulty whatever. I can easily produce furnaces any size and any shape, in which any temperature can be obtained up to the fusing point of platinum, but I have not the time to devote to teaching, and this is the simple reason why I have avoided the question.

Warrington.

THOS. FLETCHER.

A Suggestion.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION"

DEAR SIR,—I herewith enclose cutting from the *Manchester Guardian* for July 12th—

An important suit for penalties under the Pharmacy Act was heard at Liverpool County Court yesterday. A local physician had opened a shop for the sale of drugs and placed in charge a person who was not a qualified chemist. The Judge expressed a strong opinion on the case, and fined the defendant £10 and costs.

If similar actions to the above were taken against dentists in numerous branches, most of which are conducted by unregistered

ants, would it not put a stop to much of the chicanery so
 ant all over the country in the dental profession?

I remain, yours truly,
 J. H. MILNES.

*South Parade, Huddersfield,
 July 13th, 1889.*

Brunton "on the Position of the Patient during Administration of both Chloroform and Ether."

THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—I must ask your kind permission to occupy a little space in
 shing Mr. Brunton's memory of what I said at the York meeting
 is highly-important subject.

I am sorry to find in the last number of the Journal he has mis-
 sented my views, "I was bold enough to state at the York
 ing" (by way of protest, however) that anæsthetics should not be
 by *anyone*, whether by the hospital nurse or the inexperienced
 ed pupil so warmly commended by Mr. Bullen in his remarks
 he M.R.C.S.'s and their methods of administering anæsthetics,
 only by skilled medical anæsthetists.

I stated that if the semi-recumbent position in a chair was to be
 ted as the most convenient position for the operations in
 al practice, in all such cases ether was preferable to chloroform from
 point of view, including the large number of deaths that have
 n place under chloroform in dentists' chairs. "The practice in
 nd, and it is the proper way," is carried out with great care, which
 is justified (whether we use the recumbent or the semi-recumbent
 ion) by our results, which are in marked contrast to the tragic
 ts we have seen so frequently published in the medical journals
 ne past year or so as happening in England. The use of the
 -recumbent position during the administration of ether is practised
 medical men who are nothing if they were not practical, and I can
 re Mr. Brunton that the recumbent, or, as he prefers to call it
 prone position, lying level" is quite as usual a method of pro-
 re in Ireland as in any other part of the known world, including
 ls.

I am, sir,

Yours respectfully,

W. BOOTH PEARSALL,
Hon. Sec. Irish Branch.

Special Railway Fares for Brighton Meeting.

THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—In reply to my inquiries, Messrs. T. Cook & Son and
 rs. Swan and Leach inform me they will both endeavour to
 ge trips to Brighton on the 19th inst. from all the principal
 ons in the midland, eastern, and northern counties, also from
 land as far as practicable. The trips allow the journey to be
 en in London going and returning, and are for five, eight, ten,
 teen days, returning by any train on either line; fare from Leeds
 district, 19s.

ose Members whom the arrangement suits should therefore make
 ries at their local stations. I would also remind Members who
 mplate a run forward to Paris, that they can book from their own

station to London and back for a fare and a quarter, proceeding and returning by any train, providing they purchase their ticket for Paris at the same time. The Paris ticket by the Newhaven and Dieppe route allows the journey to be broken at Brighton for any length of time, going or returning, without extra charge, and from a frequent personal experience of all the routes to Paris, I much prefer the one *via* Newhaven and Dieppe. I may also remind Members who are compelled to travel by ordinary train, that, taking Leeds as an instance, the ordinary return fare to Brighton is £2, whereas by taking a cheap Paris Saturday excursion ticket at a cost of £1 3s. 3d., and adding reduced fare to London, viz., fare and a quarter, allowing passengers to travel by any train, the total fare is only £2 2s. 7d., and should the journey be continued to Paris, the cheap ticket can be exchanged—I believe in Newhaven—for a second class for 7s. extra. The above are only thrown out as suggestions, and Members are requested not to rely upon them implicitly, but make full inquiries at their local stations.

2, Brunswick Place, Leeds,
August 2nd, 1889.

Your truly,
J. CHARTERS BIRCH, L.D.S.

British Dental Association Annual Meeting.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION"

SIR,—If any members of the profession who purpose visiting Brighton at the Annual Meeting and who feel disposed to help out by offering themselves as patients for gold fillings will kindly communicate with me without delay I shall feel obliged.

44, Norfolk Square, Brighton,
July 1st, 1889.

Yours sincerely,
JAMES E. WELCH,
Hon. Sec. Demonstration Section.

APPOINTMENTS.

ARTHUR S. UNDERWOOD, M.R.C.S., L.D.S.Eng., has been appointed Professor of Dental Surgery to King's College Hospital, *vice* Ashley Gibbings, M.R.C.S., L.D.S.Eng., resigned.

DAVID MONROE, L.D.S., has been appointed to the Junior Dental Staff, Edinburgh Dental Hospital, *vice* J. Girdwood, L.D.S., R.C.S.Edin., resigned.

FREDERICK PAGE, L.D.S., and THOMAS GREGORY, L.D.S., have been appointed Extra Assistant Junior Dental Surgeons at Edinburgh Dental Hospital.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

Subscriptions to the Treasurer, 40, Leicester Square.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE.—All communications intended for the Editor should be sent to him at 11, Bedford Square, W.C.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

SEPTEMBER 16, 1889. VOL. X.

Brighton.

NOTWITHSTANDING all difficulties foreseen or unforeseen, the Annual General Meeting which has just been held under the auspices of the Southern Counties Branch was from first to last an unqualified success. The committees of the Association felt from the first that they had undertaken a very heavy task in proposing to entertain the Association immediately after the brilliant reception in Dublin last year, a reception which in many respects we can never expect to see equalled elsewhere; they could not be predicted, however, for the sad event that at the eleventh hour cast a shadow over the meeting, and but for noble forgetfulness of self on the part of the President-elect would undoubtedly have caused serious confusion, and imperilled the success of the meeting. One and all seemed actuated by the single desire to loyally support the Association, and to sacrifice themselves whenever and wherever the interests

of the cause demanded, and so it came to pass that the meeting, socially speaking, left nothing to be desired, and scientifically produced as valuable results as any of its predecessors, and in respect of one discussion, namely, that on anæsthetics, we may safely say the Brighton meeting surpassed all that have preceded it. The Pavilion was about as perfect a place for holding a meeting of the sort as could possibly be desired, and such were the facilities it afforded that for the first time the whole of the proceedings were able to be conducted in one building, and for this splendid accommodation, which we are informed would have cost in the ordinary way over £220, we were indebted to the generous hospitality of the Mayor and Corporation of Brighton.

Among the noteworthy features in the business meeting were :—the election of the three first Vice-presidents—Sir John Tomes, Sir Edwin Saunders, and Dr. Smith (Edinburgh)—a well merited token of the universal gratitude of the whole profession towards these three veterans; the sorrowful tribute to the memory of another veteran, Mr. Spence Bate, F.R.S., who died a few weeks before the meeting full of years and honours, and of whose life and work we speak at length elsewhere; and the change in the Representative Board, by virtue of which the number of members from London was reduced, while an addition was made to the number from the provinces. The propriety of a change in this direction had been fully discussed, and it remains for the future to show the beneficial results that have been predicted therefrom.

Mr. Fisher, of Dundee, showed in his report and the case-books which he had planned with such care and practical skill that the year had not been an idle one for him, and that he is not inclined to let the grass grow under his feet in the matter of poor children's teeth, and the neglect und

which they suffer. Mr. Fisher's unostentatious work is slowly but surely bearing fruit; it is now some years since he first attacked the question, and was speedily joined by a most energetic ally in Mr. George Cunningham, who quickly graded new fields in pursuit of the same good ends, but in those few years a great deal has been done, and if the introduction of the new schemes of reform to official circles has not proved quite so simple a matter as some may have hoped, we should remember, as the Chairman expressed it, that these points are almost always carried with patience.

Another question was broached which has in one form or another occupied the attention of the medical profession for many years, and is at the present moment being brought to the front with great vigour and ability by Dr. Rentoul, namely, the best way of dealing with the abuses of our great medical charities. Dr. Rentoul has already obtained favourable resolutions from the British Medical Association, and his proposals, in so far as they affect the dental section of the community, have been referred to the representative Board of the Association, there to receive the careful consideration which their importance demands. We shall no doubt hear more of this subject ere long.

Interesting papers of a scientific and practical character have been contributed by Mr. Humphreys on some matters of morphological interest, Mr. Reinhardt on vulcanite work, Mr. Cunningham on implantation, and Mr. Pedley on dental reform, so that abstract science, therapeutics, operative dentistry, and mechanical dental surgery were all ably represented; there can be little doubt that the *pièce de résistance*, so to speak, round which the interest of the meeting really centred, and which invested the gathering of 1889 with a special value to all who are occupied with operative surgery of any sort, was the exhaustive discussion by some

of the best known experts on the question of anæsthetics. It had been designedly arranged that the readers of papers should be in some measure representative of the three great anæsthetic agents (mainly with a view to dental surgery), so that the respective champions of nitrous oxide gas, chloroform and ether might meet in friendly strife and urge the claims of the English, Scotch, and Irish views with regard to this all-important question. As often happens, the discussion revealed many points of agreement, and caused many supposed divergencies to disappear. Naturally enough, seeing that the meeting took place so near London, the consensus of opinion was very heavily in favour of the gas for ordinary extraction; the differences of opinion were found to affect the choice of an agent for prolonging anæsthesia when the analgesia of nitrous oxide was of insufficient duration. Mr. Bailey thought the late Mr. Clover's experience of one death in 2,500 administrations with chloroform as against one in 25,000 with ether was conclusive in favour of the latter. Mr. Macleod thought that chloroform, if carefully given, was a perfect anæsthetic, while Dr. Cruise and Dr. Stack were all in favour of ether, as may be seen by reference to the report. We do not wish to confuse the question by any advocacy of either side, but it is only fair to remind our readers that were the discussion to be revived as we hope and trust it will be in Scotland, the supporters of chloroform would undoubtedly be more numerous. Moreover, the investigations of the Hyderabad commissioners have revealed a good analysis for chloroform as Mr. Bailey's figure show for ether. Lastly, the Scotch school only advocates chloroform when given with regard to the main principle laid down by Syme and Lister, namely, that the attention be concentrated upon the *respiration*, and therefore no case of death under chloroform, in which the ad-

Administrator relied upon the pulse for the first signs of danger, can be justly regarded as an argument against their view. Chloroform and ether, *carefully administered*, are both very valuable agents, but administrators are not all careful, and though nitrous oxide is daily given in thousands of cases by the careless and incompetent as often as by the skilled surgeon—which cannot be said of any other anæsthetic—it is difficult to substantiate a single case of death due to its administration, and no clearer demonstration of its spotless record could be found than the indictment by Dr. Stack, who had to rely upon suppository after-effects for proofs of its mischievousness. Dr. Buxton's delightfully lucid account of his researches into the physiology of nitrous oxide narcosis, and Dr. Hewitt's equally original and practical experimentation concerning the prolongation of nitrous oxide anæsthesia by the admixture of oxygen, will be found in full in this issue of the Journal. With regard to the latter there can be no doubt that the anæsthesia produced by one-eighth oxygen and seven-eighths nitrous-oxide is accompanied by a more peaceful and natural appearance than is usual with the pure nitrous oxide anæsthesia. We trust the various questions so ably introduced will be further discussed in our correspondence columns. It is to our profession that the world owes the employment of anæsthetics in surgery, and it is befitting that a meeting of our Association should be the scene of a memorable discussion that may perhaps prove a landmark in the history of this branch of science.

It was with sincere pleasure that the Association welcomed to its meeting the delegation of distinguished French dental surgeons who represented the International Dental Congress at Paris—MM. Dubois, Godon, and Remonnet, who came full of hospitable intent to persuade members, who we

expect needed little persuasion, to cross the "angry channel" to their great gathering in September. We also had the pleasure of entertaining one guest from America—Dr. Bonwill—who we trust did not regret his visit to our shores nor find it altogether "stale, flat, and unprofitable."

So another meeting has come and gone, leaving us wiser and stronger, more united and more confident in the future than ever, and we have every reason to hope that next year in the beautiful scenery of Devon, under the ægis of our genial President-elect, Mr. Browne-Mason, another equally valuable and equally happy meeting awaits us.

ASSOCIATION INTELLIGENCE.

Western Counties Branch.

(Continued from page 487.)

Mr. RICHES concurred with Dr. Vachell in condemning the baneful habit of thumb-sucking. Whilst advocating experiments as to the action of different kinds of food upon the teeth, he thought it was very difficult for a busy practitioner to make them. With regard to the question of the action of sugar on the teeth he was under the impression that it had been pointed out that the action was through the system. It was a fact that sugar did not affect negroes. He had had a number of them at his place and their teeth were wonderfully good, though he had seen several children of negroes from Jamaica and Demerara whose teeth were not much better than those of English people. He had made artificial plates for negroes. With regard to the use of a tooth brush that was a very difficult matter. In some cases a considerable amount of difficulty, pain, and trouble had been given to the patient entirely by the brush.

Mr. WILLIAMS thought they must go back to one great cause for the decay of teeth, and he could not help thinking that vaccination was performed at the wrong time, just as the teeth and bones were forming. If vaccination were postponed for some time, he thought it would be beneficial. With regard to the action of sugar on the teeth, no doubt many of those present had

d patients come to them and say their children had never
en sweets and yet their teeth were bad, while children who
re at liberty to eat sugar had good teeth. He therefore could
t help thinking that the effect of sugar was not so baneful
er all.

Mr. BALKWILL pointed out one peculiarity in the formation of
th, *i.e.*, that when a certain peculiar cusp on the upper first
lar was present, it almost invariably had an effect on the one
the other side. It was evident there must be some connec-
n. It seemed to him that the nervous system had something
do with the tissues as they grew. He had noticed that with
ple subjected to a great nervous strain they were subjected
serious attacks of rapid decay of their teeth.

Mr. CARLTON RICHES mentioned two cases in favour of elderly
ple requiring artificial teeth.

Mr. MORTON SMALE said it was very difficult to discuss the
ole of the ground opened to them by Dr. Vachell's paper. He
s glad Mr. Fernald had called attention to the fact that so
ny gentlemen had misunderstood Dr. Vachell as to artificial
th. He thought there was a good deal of authority for the
ements that had been made, but, on the other hand, though
necessary, they aided in the enjoyment of life. With regard
cleansing, he thought it absolutely essential that teeth should
cleansed thoroughly. The sponge was good, the tooth-brush
good, and he thought a toothpick—a good stiff quill—was
d. He had advised all his lady patients to use them, notwith-
ding that they said it was vulgar, unladylike, and exceedingly
icult to do in this country. They, however, were beginning to
it on the quiet, and he hoped they would have the courage
use the toothpick just as men did. There was another way
cleansing the teeth, that was by passing floss silk up the teeth
cleaning them. He thought that one reason why the Indian
es had such good teeth was that directly they had eaten
y cut a piece of wood and cleaned each individual tooth
ularly. Mr. Browne-Mason, he thought, had said a good
l about diet. Injudicious feeding caused indigestion, and that
ed upon the teeth undoubtedly. They all knew the importance
feeding the mothers and the children, and as to sugar, he was
e of those who did not think sugar did much harm if taken in
deration, nor did sweets, providing they were hard, honest sweets
d not soft like chocolate creams. Sugar was a very valuable

hydro-carbon, of real value to the system. With reference to the experiments mentioned by Dr. Vachell it seemed to him they were made a very long while ago, and he would like to know whether the persons who made them were very careful that germs were excluded. There was no doubt that if they were not carefully excluded, germs might have had something to do with the caries found. He did not think that medicines, such as perchloride of iron, would do much harm if the mouth were washed out afterwards.

In the majority of cases, he thought caries was due to one predisposing cause, the malformation of teeth, or some food or acid-forming substance which got in between them. In addition he thought ill-health was most distinctly a cause of caries, that was to say, the teeth in ill-health were not so resistant as they were in health. They heard a good deal about the theory of caries. He believed it was all external, and he did believe the health had a great deal to do with it. In a phthisical patient the teeth were not resistant. There was no doubt, too, that mercurial teeth were a fact, but any disease that injured the mucous membrane in early life would produce ill-formed teeth, very much like the teeth which a few years ago were said to be entirely due to mercury. He believed firmly that the absence of teeth shortened life. Any man who had to go through this life suffering from the want of teeth, suffered all kinds of intestinal trouble.

One more thing, he thought, might be said about the system of sending notices to parents as to the time children's teeth should be seen to. He thought Englishmen were a little bit afraid to adopt it. The suggestion thrown out by the President in his address was a very good one—that the British Dental Association should formulate rules, and that they should be published in pamphlet form with the authority of the Association. These could be given to patients for their perusal in order that they should know exactly what to do with children's and their own teeth. Of course there should be the distinct understanding that no individual member of the Association attached his name to it in any way.

Mr. W. E. HARDING thought the papers were of immense importance and value. The subject of dental hygiene was one in which it was very difficult to get their patients to take an interest. One reason of that he thought was because they were afraid of "calling a spade a spade." On the other side of the Atlantic they were not so, and they would tell a patient at once if his mouth were

They should insist upon it that their patients kept their teeth clean, and if they did not, then scale them and charge them.

A great deal of neglect of teeth was due to ignorance. Busy men led busy lives and had not the time to instruct themselves. If they had the pamphlet spoken of it would be very handy. He thought the papers could be divided into two heads: first, the preservation of good sound teeth, and secondly, their maintenance in good sound condition. Mr. Browne-Mason had spoken especially of children, and he properly laid great stress upon the education of the mother. There, he thought, was the starting point of the inferior quality of most teeth—the mother did not care for her own health. He thought the treatment of the mother should not be so much the supplying her with special food, as maintaining her own health, especially the digestive organs. Dr. Vachell would bear him out in saying that in infancy the digestive organs give all sorts of trouble. That was very much more within the region of the physician than it did of the dentist. A child, he thought, should not taste food but milk under nine months.

Coming on to the subject of periodical examination of children's teeth, that was most important, though he could not say he quite agreed with Mr. Smale as to the advisability of sending notices to the parents. Many would look upon it as touting for business. He thought again the question of cleansing the teeth was very important. He thought the friction of a fairly soft brush upon the mucous membrane was quite as important as brushing the teeth. The mucous membrane accumulated a quantity of mucus which was the acid and assisted decay. With regard to sugar he had been very much struck with the prevalence of caries in grocers' apprentices. He thought that due not to sugar as such but from the habit of constantly putting a few particles of sugar into the mouth. It was the acid action of this decomposed sugar that caused the caries. He thought some very careful experiments might be made by some of the members who were accustomed to making chemical and physiological experiments. There were many details that needed working out with care, of which a casual observer would take no notice, such as to the rapidity with which sugar at the temperature of the mouth would become

The question of germ exclusion was most important. He had lately had a case of very considerable erosion before him. In one young patient, a lady of about twenty-two, he was in the habit

of seeing three times a year. Four months before he had not the erosion there were no symptoms at all. During the months, however, there was an immense amount of erosion. learned from the young lady that she was under treatment medical man. He (the speaker) took an early opportunity calling upon him, and learned that she would take no animal food, and lived very much upon light "kickshaws." As a result her digestive system suffered. He urged the doctor to attend to her digestion, and the treatment he himself adopted was twice a day to wash her mouth with a solution of carbonate of soda, and at night to rub precipitated chalk between the teeth. The result was that the erosion had quite stopped.

Dr. VACHELL then proceeded to reply to the discussion. He wanted to thank the meeting very much indeed for allowing him to be present, for he had learned a great deal. He entirely granted the experiments he was able to find relating to sugar were old, but he did not know they had very great value, but they were all that he could find. He did not notice in Cardiff anything approaching a dental library to which he could refer. It seemed to him it would be as useful for dentists to have a library of dental books as it would for medical men, and he saw no reason why the libraries should not be joined. He would be very glad, if they saw fit, to advocate that the members of the Dental Association in Cardiff should have full access to the medical library, on paying some little subscription. In that way they would be able to add dental books to the library. He had found himself at a great disadvantage. He had hoped to have found some dental books to which he could refer, but he could find none in the town. With regard to the action of sugar, there was another fallacy in the argument he wanted to like to point out. The experiments made were upon dead teeth, and he thought it possible the action of sugar would be altogether different upon live teeth. If they wanted a new experiment, he saw a very pretty one the other day. A lady patient showed him a little operculum of shell fish which had been sent her from Australia. The mouth of the fish was closed by a little operculum (of a calcareous nature). She said the fish, or what was understood to be one, would not show life until it was put in vinegar. It was put in vinegar, and immediately it began to dance all over the place. It was simply due to the gas that came out from underneath. It showed that acids had a very quick and direct influence upon bony or calcareous matters. He was very glad

o of the speakers were good enough to correct his remarks
teeth in old age. He had no desire to trench upon the
st's profession, but he thought it a matter of interest. He had
t to say it was a matter of very great interest to learn for the
ime that it was possible for old age to exist after the teeth were

He believed that the gums hardened in some mysterious
and he had heard of a very interesting old *woman* who de-
d that at ninety years she could eat a beef steak as well as any
man. With regard to the teeth of negroes, he thought there
t be a little fallacy there. The negro lived under thoroughly
ny conditions in the open air, and that might be a reason why
teeth were so well preserved, and they were able to resist the
erious effects of sugar. That was rather borne out by what
Riches had said with regard to negroes, who, when they came
d a civilized life, were not able to resist it.

. CARLTON RICHES said he would like to point out one
r that had not been mentioned by any of the previous
ers—that was the time at which teeth should be cleaned.
was of very great importance. People generally cleaned
teeth in the morning after they rose. Night was the most
tant time for cleaning the teeth. Mr. Browne-Mason, he
ht, had recommended having a little carbonate of soda in
ater bottle.

. BROWNE-MASON: Under certain conditions.

RICHES said he had found it very beneficial used in that
ver night regularly. The mouth could be simply rinsed or
ed or sponged. The acid of the mouth was greater during
ght than the day.

THOMAS (Swansea) said the papers had given them a great
f information, but nothing definite or decided. For example,
was the sugar question; they knew certainly a little more
it, but very little. But there were two things on which he
like to speak. Welshmen in very many cases were similar
glishmen, but at the same time there were peculiar conditions
ch they lived, and which were not applicable to English-

example, in the neighbourhood in which he (the speaker)
there were large tin plate works, and it was also on the sea

He found quite a number of people who came to him and
ained that their teeth had broken down entirely. On inquiry,

he found that it had all taken place perhaps within twelve months. He had come to the conclusion it must be something in the atmosphere—either salt air or copper fumes. There were large copper works in the district. He was not prepared to say that salt air had anything to do with it, for sailors, as a rule, had very good teeth. Sulphuric acid was used in tremendous quantities in tin plate works. Men inhaled the fumes for eight or nine hours a day. Unfortunately dentists did not come across their teeth in the condition in which they could do anything but extract them. There were also quite a number of girls in these works who were affected in this way. This was the only way in which he could account for the bad teeth of the locality.

The PRESIDENT was sorry to say the time set apart for discussion had now gone. Most of the topics of importance had been touched upon, but there was one which experience told him was very important indeed—the wearing of artificial teeth. Patients often thought they were going to last a lifetime. The teeth would last a lifetime, but mouths changed. Teeth should be fitted to be comfortable. He did not tell his patients that their teeth were going to last a lifetime. It was a question that had to be faced, and they should be perfectly plain with their patients. That was one of the reasons why he wanted a set of rules laid down for guidance. If dentists were not agreed amongst themselves how could they expect the public to take what they said with authority? They would do well to have in their hands some authority beyond dispute. He trusted that something practical would come out of the discussions, and he hoped the Committee of the British Dental Association would take up the question.

Mr. BROWNE-MASON said there seemed to be one or two points to reply to—especially to Dr. Walker in respect to the tooth brush. He (the speaker) had said a child should be taught to use it. The main use of the tooth brush was to remove deposits from between the teeth. This could be materially aided by Mr. Smale had said, by the use of the toothpick, and if the toothpicks were used up and down and got into the interstices of the teeth it would not produce the cuts and notches which it might produce if used cross ways. He had been asked to describe his particular brush, which was Metcalf's. The centre hairs, taken long, were very much longer than the outside ones, so that they would get into the interstices. He had also been asked about tooth sucking. Possibly sucking the thumb would bring back

lower teeth. The mischief as to sucking thumbs, however, was not the case of infants. Their front teeth were thereby pushed too much in, and the malformation was confirmed by the habit being continued as the child grew older.

BALKWILL had very great pleasure in proposing a vote of thanks to Dr. Vachell and Mr. Browne-Mason for the two excellent papers which had provoked such interesting and useful discussions.

SMALE seconded the vote and expressed the hope that Dr. Vachell's most valuable suggestion as to the establishment of a dental school would be carried out.

PRESIDENT said he had been very much interested in the resolution proposed by Mr. Harding of the Midland Branch of the Association as to the doing away with Clause thirty-seven of the Dentists Act. It was a very important subject, and he would express the hope that if Mr. Harding followed up the subject the Association would give its support.

HARDING said what he had advocated was that the Medical Council should impose such restrictions as would ensure that only *bona fide* apprentices, whose indentures expired before 1880, should be admitted to the Register.

SMALE thought the less they said with regard to legislation the better. They had an act very much more powerful than any other profession, and if they began tinkering with it they would undo several important clauses repealed.

WALKER said if proofs were sent to the Committee of the Association of any man they would prosecute.

The whole of the members present were then entertained at a dinner by the President, Mr. Oliver.

EXCURSION.

On Saturday, May 27th, about twenty of the members joined an excursion to the beautiful valley of the Wye. Proceeding from Cardiff at 10.20 in a saloon carriage placed at their disposal, they made the circular tour of the valley to Monmouth and back to Cardiff.

At Tintern an excellent lunch was provided. After some short speeches, the grand old abbey was inspected. At 2.30 the members were in attendance to take the party to the Wyndcliff, where a superb view of the winding river and valley of the Wye and the Severn was obtained.

Arriving at Chepstow at 4.30 the party separated on different homeward routes, each having voted the excursion of unqualified enjoyment.

The Annual General Meeting, 1889.

THE Annual General Meeting of the Association was held year at the Royal Pavilion, Brighton.

On the evening of Wednesday the 21st the festivities commenced with a reception by Mr. Alderman Rymer at the Pavilion which was followed by an exceptionally interesting chamber concert, and thus the members and their friends were afforded opportunity of a pleasant social meeting before entering upon more serious business of the meeting.

Thursday, August 22nd.

THE BUSINESS MEETING.

On Thursday morning the business of the meeting commenced. Mr. J. SMITH TURNER, President of the Representative Body, occupied the Chair. The following gentlemen signed their names as having attended, in the book provided for the purpose :—

Ackery, J., London.
Alexander, M., Liverpool.
Amoore, D. W., St. Leonards.
Amoore, J. S., Edinburgh.
Apperly, E., Stroud.

Bacon, B. W., Tunbridge Wells.
Balcomb, T., Jersey.
Baldwin, H., London.
Barnard, A. G. W., London.
Barton, W., Eastbourne.
Bateman, G. W., London.
Bayfield, C. M., London.
Bell, Frank, Tunbridge Wells.
Birch, J. Charters, Leeds.
Browne-Mason, C., Scarborough.
Browne-Mason, J. T., Exeter.
Brunton, Geo., Leeds.

Cameron, D. R., Glasgow.
Cameron, James, Glasgow.
Canton, F., London.
Caush, D. E., Brighton.

Clarke, T. Meadows, Richmond, Surrey.
Cocker, Arthur, Halifax.
Coffin, H. L., London.
Coffin, W. H., London.
Cole, J. Fenn, Ipswich.
Colyer, H. O., Ryde, I. of W.
Corbett, D., jun., Dublin.
Cornelius-Wheeler, J., South.
Coxon, S. A., Wisbech.
Cumine, R. H., London.
Cunningham, Geo., Cambridge.
Curnock, G. D., London.
Cuscaden, R. D., Sligo.

Daish, W. G., Ryde, I. of W.
Dennant, J., Brighton.
Dent, J. W., Stockton-on-T.
Dickinson, M. de C., St. Leonards.
Donagan, A. E., Birmingham.

Egan, L. J., Cork.
Elliott, T. H., Brighton.

tt, W. T., Birmingham.
 od, W. H., Belfast.
 s, Henry, Tenby.

e, L. M., London.
 kner, John, London.
 am, R. E., Brighton.
 ald, H. P., Cheltenham.
 er, W. M., Dundee.
 n, J. C., Eastbourne.
 ergill, A., Darlington.
 O. A., Brighton.

ill, A., Redhill.
 ell, J. H., Penzance.
 ell, W. F., Liverpool.
 ie, W., Oxford.
 H. B., Norwood.
 ston, W. C., Scarborough.
 uths, H. W., Newport.
 e, H. N., Walsall.

Frank, Hertford.
 T. S. Muspratt, Rock Ferry.
 e, S. W., Chichester.
 is, H. E., London.
 nison, A. B., Newcastle-on-
 me.
 nison, Walter, Brighton.
 h, R. M., Bristol.
 man, C. A., Bristol.
 ar, Wm., Bristol.
 ry, George, Hastings.
 burn, D. S., Nottingham.
 n, W., London.
 ds, Jas., Coventry.
 kley, A. G., London.
 hes, Morgan, Croydon.
 phreys, John, Birmingham.
 ands, J. E., Gt. Grimsby.
 hinson, S. J., London.

son, Thos., Burnley.
 son, M., Chester.
 son, S. P., West Brighton.
 s, Alfred, Cambridge.

, E. S., West Brighton.
 y, Alex., Bedford.
 t, H. J., London.

more, E. J., Bradford.
 ence, H. A., Ealing.
 ox, R. P., Cambridge.

Lewes, E. A., London.
 Lodge, G. H., Rotherham.
 Lucas, G. J., London.

Mackenzie, F. V., London.
 Macleod, W. B., Edinburgh.
 Maden, W. H., Rawtenstall.
 Maitland, Louis, London.
 Mallet, G., Newbury.
 Mallet, H., Exeter.
 Mansell, T., Birkenhead.
 Manton, John N., Wakefield.
 Mapplebeck, W., Liverpool.
 Martin, Henry, Portsmouth.
 Matheson, L., London.
 Maxwell, L., Hastings.
 McAdam, Geo. C., Hereford.
 McCash, J. M., Glasgow.
 McStay, John, Belfast.
 Moore, R. H., Dublin.

Newland-Pedley, F., London.
 Norris, E. L., Brighton.

Owen, R., Wolverhampton.

Palethorpe, W., Birmingham.
 Parkinson, G. W., London.
 Peall, F. S., London.
 Pearse, John, Tunbridge Wells.
 Pedley, G., London.
 Pedley, R. D., London.
 Penfold, W., London.
 Pike, J. L. F., Sheffield.
 Pillin, L. B., London.

Quinby, H. C., Liverpool.
 Quinlan, T., Cardiff.

Redman, J. H., Brighton.
 Reinhardt, J. H., London.
 Rhodes, W. A., Cambridge.
 Richards, F. W., Birmingham.
 Richards, G. O., Richmond,
 Surrey.
 Rilot, C. F., London.
 Robbins, C., London.
 Rock, F. J., Brighton.
 Rowney, T. W. F., Derby.
 Rymer, James F., Maidstone.
 Rymer, S. Lee, Croydon.

Sanders, J. J. H., Barnstaple.
 Saunders, W., Ramsgate.

Sherwood, M., Oxford.
 Silvester, S. T., Croydon.
 Sims, Chas., Birmingham.
 Smale, Morton, London.
 Smith, A., Bristol.
 Spokes, P. S., London.
 Spotswood, John, Sheffield.
 Stack, R. T., Dublin.
 Stoner, C. B., Brighton.
 Stoner, J. N., Brighton.
 Storey, J. C., Hull.
 Street, G. H., Richmond, Surrey.
 Surman, R. J., Worcester.

Tait, T. A., Tenterden.
 Tester, A. H., Tunbridge Wells.
 Tod, E. M., Brighton.
 Tomes, Sir John, Caterham.
 Trollope, W. T., Tunbridge Wells.
 Turner, J. Smith, London.

Underwood, A. S., London.

Vander Pant, F. J., Kingston-on-Thames.

Waite, W. H., Liverpool.
 Walker, F. D., Doncaster.

Wallis, C. J. B., London.
 Wallis, J. G., Hull.
 Watson, D., London.
 Weiss, Felix, London.
 Weiss, F. Henri, London.
 Weiss, Willoughby, London.
 Welch James E., Brighton.
 Welham, G. W., London.
 West, Charles, London.
 Whatford, J. H., Eastbourne.
 Whatford, J. T., Brighton.
 White, T. Charters, London.
 Whittaker, G. O., Manchester.
 Williams, Caleb, Leamington.
 Williams, F. W., Bedford.
 Williams, G. J., London.
 Williams, H., Londonderry.
 Williams, Walter, Eastbourne.
 Wilson, J. A., Bangor.
 Wolfenden, A. B., Halifax.
 Wonfor, T. W. C., Brighton.
 Wood, John, Brighton.
 Wood, R. E., Eastbourne.
 Wood, W. R., jun., Brighton.
 Wormald, D. A., Bury.
 Wormald, S., Stockport.
 Wormald, T., Oldham.
 Wright, J., Midhurst.
 Wyles, Henry, Leeds.

Meeting of the Representative Board.

A MEETING of the Representative Board was held on Thursday August 22nd, at Brighton, Mr. J. SMITH TURNER in the chair. The following gentlemen were present:—Messrs. Weiss, Coffin, Matheson, C. West, Ackery, Canton, and Smale (London). Messrs. Redman (Brighton), Bacon (Tunbridge Wells), Lee Phipps (Sheffield), W. C. Quinby (Liverpool), McLeod (Edinburgh), Waite (Liverpool), Morgan Hughes (Croydon), Cunningham and Rhodes (Cambridge), Fenn Cole (Ipswich). Excuses for absence were announced from Messrs. Corbett, Pearsall, Stack, Rees, Price and Oliver.

It was recommended that the Annual Meeting of 1890 should be held at Exeter on August 23rd, 24th, and 25th, and Mr. Brown-Mason was nominated as President-elect.

The Hon. Treasurer's and Secretary's reports were taken and read.

The following members retired in rotation from the Representative Board:—Sir John Tomes, Sir Edwin Saunders, Messrs.

W. Parkinson, J. H. Mummery, S. J. Hutchinson (for London); Messrs. C. H. Bromley, C. Sims, Blandy, Fenn Cole (for the Provinces).

In conformity with a resolution of the Business Committee, the five retiring members for London were replaced by three, and the remaining vacancies filled by provincial members, viz.: Messrs. D. Hepburn, S. Spokes, W. H. Woodruff (London), and R. P. Pennox, G. Cunningham (re-elected), J. R. Brownlie, C. Sims (re-elected), W. E. Harding, E. L. Dudley, E. Apperley, J. Cornelius Wheeler, and T. E. King (for the provinces).

In view of the resolution to be moved at the Annual Meeting, That the Vice-Presidents may be elected by the Association in General Meeting on the recommendation of the Representative Board," it was agreed, in the event of this resolution being carried, to nominate Sir John Tomes, Sir Edwin Saunders and Dr. John Smith for election to that office.

It was resolved to bring the correspondence of Dr. Rentoul before the Annual Meeting.

Some cases of infringement of the Dentists Act were referred for further consideration to the Business Committee.

The following gentlemen were elected Members of the Association: A. E. Donagan, B.A.Cantab., L.D.S. Edin. (Birmingham); R. Feltham (Brighton); J. E. Husbands, L.D.S. Edin. (Brimbsby); J. G. Munro, L.D.S. Edin. (Edinburgh); W. H. Madin, D.S.I. (Rawtenstall); W. B. Paterson, F.R.C.S., L.D.S. Eng. (London); F. Page, L.D.S. Edin. (Edinburgh); F. J. Rock (Brighton); G. W. Stringfield, L.D.S. Edin. (Lowestoft).

The CHAIRMAN said he had first to ask the Honorary Secretary to read a letter from their President, Mr. Corbett, of Dublin, regretting his inability to be present. He was sure that he was fully expressing the regret of all the members in saying how sorry they were that Mr. Corbett was not able to be present. Mr. Corbett's letter expressing regret at his unavoidable absence was then read. He had now to call upon the Treasurer to read his annual report.

Mr. F. CANTON, the Hon. Treasurer, read the report as follows:—

GENTLEMEN,—In presenting my report I shall as usual not detain you long, but have added a few particulars which I thought might be of interest to the members.

In 1879 the Association started with only 161 members, and its number has each year increased until we now in 1889 number

nearly 800, and I cannot help thinking that if individual members of the Association would only look round them they would find many men willing to join if only asked to do so, and our membership might very speedily be raised to at least 1000.

Since the formation of the Association in 1879, now just ten years, ninety-five members have been removed for non-payment of their subscriptions, according to your bye laws, but I am very glad to say that eleven of these have joined us again and hope that we may yet get many of the others back.

The Association, since its establishment to the end of the year 1888, has proceeded against seventeen persons for infringement of the Dentists Act, and in every case with success. The costs of these prosecutions have amounted to £416 18s.

Our Journal is necessarily an expensive item in our expenditure although so much gratuitous labour is given by a few members towards carrying it on. At the same time I think all members will agree that it would be exceedingly difficult if not impossible to carry on the Association successfully without it; I only hope the day is not far distant when our funds will allow us to pay full value for work done in this department of our Association.

The average cost of the Journal per month for printing, &c., is about £35, making £420 a year exclusive of our sub-editor's salary and reporting, &c., which brings it to about £550.

Reporting the annual meetings of the branches and the annual meeting of the Association forms a considerable item.

Our present balance at the bank is £805 11s. 5d.

There are at present 147 members in arrears with their subscriptions, of whom twenty-two are two years in arrears. I need hardly say that I shall be very glad to receive the subscription of any member present who is in arrears, and I have order forms for paying through a bank, which I shall be happy to give to anyone who desires to pay in this way.

The accounts of the Association are published annually in the Journal, so that I need not detain you longer.

The CHAIRMAN having put the question from the chair that the report of the Treasurer be accepted, the motion was unanimously agreed to.

Mr. MORTON SMALE, the Honorary Secretary, then read the following report:—

GENTLEMEN,—In laying before you an account of the proceedings of the Association your Executive have to report a reasonable

amount of progress both numerically and financially—not, perhaps, all that can be desired in either particular, but, nevertheless, progress which if it be slow is none the less sure and satisfactory. During the past year your Representative Board has met four times and your Business Committee eleven times. The matter under their consideration other than that which is strictly administrative has been of the usual character, having reference chiefly to the prosecution of offenders against the Dentists Act and the maintenance of the integrity of the Dentists' Register.

It has been long evident to your Executive that the prosecution of offenders as hitherto conducted, although eminently successful from a legal point of view, has not produced that impression on the public generally which is so very desirable. The difficulty of carrying out a scheme which would be more effectual seems to increase as it is considered more closely, but we hope to surmount some of the obstacles, and if possible by concerted action to impress and enlighten the public in addition to punishing offenders—a result with which we shall be all much gratified. Two conditions, however, for the due and proper carrying out of such a scheme are necessary, viz., a large increase in the number of our members, with a corresponding addition to the revenues of the Association, and regular payment of their subscriptions by the members.

The prosecutions, all of which have been successfully carried out, during the year have been three in number, viz., Gray, of Glasgow, and Abel, of Newport; the former carried out by the West of Scotland Branch; the latter by the lawyers of the Association. The case of Jackson, of Halifax, was conducted by a local lawyer at the instigation of the practitioners in that town, but the whole expenses incurred have been paid by the Association. In the cases of both Jackson and Gray a new question was raised and decided in our favour, that irregular practitioners cannot protect themselves by publishing in small letters between their own names and the title "dentist" the words "late with Mr. So and So." A very important opinion has been obtained from the eminent criminal barrister, Mr. Poland, with regard to irregular practices, which can be seen by any of the members of the Association on applying to the Hon. Secretary.

A member of the Association who was guilty of publishing a private address on a card issued by an advertising Dental Institution has been called to account, and he has at the request of the Association had the address removed.

With regard to the Register, your Executive have been in repeated communication with the President and Registrar of the General Medical Council, who have at all times shown an earnest desire to administer the Dentists Act fairly and impartially, by the large amount of private and leisure time they have been ready to sacrifice to the consideration of our business, and as most of you already know, the President has recently adopted the expedient of demanding the certificate of birth from those who apply for registration under clause 37.

The cases of incorrect address are not numerous and in those which have come under our notice have appeared to be solely caused by the carelessness of those most intimately concerned, and not by any inattention on the part of the Registrar.

According to a resolution of the Representative Board a copy of standing orders is being compiled from the new index to the minutes of the Representative Board. This will in future be attached to each copy of the bye-laws, in order that every member may have a better idea of the real constitution of our Association as it has been built up upon our articles of Association and bye-laws.

At our highly successful meeting in Dublin a resolution was brought before you regarding Vice-Presidents. The office has been in existence before, but owing to the apparent want of harmony between the articles of Association and the bye-laws, it has fallen into abeyance. Following the resolution then passed the will be brought before you to-day another resolution for your consideration concerning the mode of appointing Vice-Presidents and another proposed by Mr. King, of York, that the President and President-elect of the Association shall be members of Committees.

The enlarged and improved list of members issued this year it is hoped, has given unusual satisfaction, and been found to be of great practical utility.

The meetings of the Branches during the past year have been numerous and successful, and have provided the Journal with much excellent matter. Great public good is done by the holding of these meetings in various parts of the kingdom frequently. It is also highly desirable that the Executive of the Branches should take steps to give publicity to such meetings in the public press, taking due and proper care that no abuse of such publicity should be permitted for the personal advertisement of one individual.

Sixty-four new members have been elected during the year. Seven have been removed for non-payment of subscriptions, three have resigned, while the Association has to regret the loss of two members by death, the actual number of members being 710, as compared with 710 last year.

Our loss by deaths is a serious one, for each of the members were well-known figures at our Annual Meetings—Mr. Jewitt, of Liverpool, and Mr. Spence Bate, F.R.S., of Plymouth. Mr. Bate held the presidential chair, and his reputation as a scientist had spread far beyond the circle of his profession, and his loss must be regretted not only by this Association, but by the whole scientific world. Mr. Jewitt at all times took a lively interest in the welfare not only of the Association but of his profession, and had been a member of the Council of the Midland Branch. With the representatives of each of these our Association must feel sincere condolence in their bereavement.

In presenting to you this Annual Report, the Executive have congratulate the members on the Association having completed its first decade of its existence, and to express the hope that its progress and consolidation may continue in a like gradual and satisfactory manner. It is in the nature of things that changes must come, but if they are to be constructive, they must be made on a careful consideration of the future of the Association and also of the profession which the Association represents. While laws are made, errors will occur in the making thereof, and while laws have to be administered, errors will occur in the administration thereof; but the remedy is not always to be found in new laws or new administrators, for we cannot escape the condition of human fallibility.

The CHAIRMAN said that as the Secretary's Report was of a more formal character than that of their Treasurer he would ask someone to propose its adoption.

Mr. PILLIN moved that the report might be adopted.

Mr. FENN COLE seconded the resolution, which was unanimously agreed to.

The CHAIRMAN said the next business was the fixing of time and place of the Annual Meeting for 1890. The Representative Council had received an invitation from the Western Counties Branch expressing a desire that the meeting should be held in Exeter, also that Mr. Browne-Mason should be the President-elect. He asked the members if they were willing to accept the

invitation of the Western Counties Branch ; and in putting the question he was quite sure that the gentlemen constituting the Branch would do all they could to receive the Association in a becoming manner.

The resolution to accept the invitation of the Western Counties Branch was carried by acclamation.

The CHAIRMAN said it would follow as a sequence that Mr. Browne-Mason would be chosen as President-elect.

The resolution was agreed to.

Mr. BROWNE-MASON, in responding, said he felt very highly of the honour that had been conferred upon him by nominating him as President-elect. He was afraid that he might not be a very worthy successor of the very eminent men who had preceded him, but they might be assured that he would do his utmost to render the meeting a success. The old city of Exeter had many claims upon a Society such as this, first, on account of its easy access to all parts of the United Kingdom. They were only four and a quarter hours' journey from London ; they had improved the communication with the North by the Severn Tunnel, which really made the journey from Scotland a very small affair. The old city was a very attractive place. There were many archaeological points of interest about it that must be attractive. It was in the midst of charming scenery, and altogether there could be no more enjoyable place for members who could give the time than to run round their sea-board both north and south, and get upon Dartmoor, which was to his mind the acme of a pleasant sure ground. He was sure that the Western Branch would accord the Association the warmest of receptions, and he should be only too willing to do anything that lay in his power to make the meeting a successful one.

The CHAIRMAN suggested that the date of their next meeting should be the 23rd, 24th and 25th August, 1890, and the above dates were accepted by the meeting.

The Chairman said the next business was the appointment of members for the Representative Board. By their rules five members from the provinces had to retire, and five from London, and the usual custom had been to substitute them by representatives chosen in equal proportions from both places. According to a resolution that had been passed by the Representative Board, the changes were not to be quite as invariable as they had been hitherto. It had been considered by the Board that owing

the large increase of members in the provinces, there ought to be a greater number of representatives coming from the provinces than there were at present. He would ask the Secretary to read the resolution.

Mr. MORTON SMALE said the resolution carried at the last meeting of the Business Committee was, "That in view of the increase of country members which has taken place of late, it has been deemed advisable that the number of provincial members of the Representative Board should be increased." This year had been decided only to recommend three names for London: Sidney Spokes, Mr. David Hepburn, and Mr. W. H. Wood-ward. For the provinces the following gentlemen were nominated: J. R. Brownlie, of Glasgow; Mr. C. Simms, of Birmingham; W. E. Harding, of Shrewsbury; Mr. B. Dudley, of Bath; J. Apperly, of Stroud; Mr. J. Cornelius Wheeler, of Southsea; T. E. King, of York; Mr. G. Cunningham, of Cambridge; and Mr. Lennox, of Cambridge. Those were the names suggested by the Representative Board for their consideration, but any other member had any other name to propose, they would be very happy to consider it.

The CHAIRMAN said most of the gentlemen nominated from the provinces had been nominated by the branches themselves. There was no other name proposed he would ask the members to proceed to their election.

The above gentlemen were duly elected to fill up the vacancies on the Representative Board.

The CHAIRMAN said the names of the London members who had been removed from the Representative Board were Mr. Wilkinson, Mr. Mummery, Sir John Tomes, Sir Edwin Saunders, and Mr. S. J. Hutchinson. Those from the provinces were Mr. Bramley, Mr. Simms, Mr. Blandy, Mr. G. Cunningham, and Mr. Hann Cole. He was sure the members must regret their loss, though in the ordinary course of events they had to make room for others; at any rate they would be entirely forgetting their duty if they did not accord to them their sincere and hearty thanks for the services they had rendered the Association as members of the Board.

The motion was carried with acclamation.

A motion of which Mr. KING, of York, had given notice was postponed, owing to his absence.

Mr. F. CANTON said at the last meeting it was decided to

alter their bye-laws and make them similar to their Articles of Association, so that they might elect Vice-presidents, and Bye-law 7 was altered accordingly. It was now for the meeting to decide how these Vice-presidents should be elected. On reference to the Articles of Association, page ix., No. 8, it was there stated that Fellows might be elected from time to time by the Association in general meeting on the recommendation of the Board. He had taken this as his guide in bringing forward the following resolution:—"That the Vice-presidents may be elected by the Association in general meeting on the recommendation of the Representative Board." The object of having Vice-presidents was that they might be enabled to keep amongst themselves in honourable position those who had done good work in the cause of the Association, and who, from increasing years or failing health, did not feel equal to taking an active part, although the Association would be exceedingly sorry to lose their services and influence altogether. He moved the resolution with the consent and approval of the Representative Board.

Mr. MORTON SMALE said he had very great pleasure in seconding the resolution.

Mr. BROWNE-MASON thought it was a resolution to which no exception could be taken. It was most desirable that they should keep their old friends amongst them as long as they would stay with them. He did not think the resolution was one which required any comment.

The CHAIRMAN said if there was no amendment moved he would put the resolution to the meeting.

The resolution was unanimously agreed to.

The CHAIRMAN said there would be a matter brought before the Association shortly which he would only briefly allude to now. It was a sad event, and it had prompted them to take action on the resolution that had just been passed. If that resolution had been passed in the previous year they would have had amongst the names of their Vice-presidents one who had since passed away from them, and whom they all respected and esteemed. He referred to the late Mr. Spence Bate, of Plymouth. The Representative Board had thought it wise to ask the Association to act upon this resolution at once, and suggested that they should immediately elect as Vice-presidents of the Association Sir John Tomes, Sir Edwin Saunders, and Dr. John Smith, of Edinburgh. It would be presumption on his part to pretend to recommend

the names in any way whatever. He would only say that those gentlemen had been with them in the very front of their movement from its origin, and indeed to some of them they were indebted for its origin. He hoped, therefore, that without further delay in any way they would signify their approval of this suggestion of the Representative Board, and elect these three gentlemen by acclamation.

The resolution was carried by acclamation.

SIR JOHN TOMES said he was the only one of the three who was present at the meeting, otherwise he might have retired from the post of returning special thanks as not being the oldest. He thought, however, that Sir Edwin Saunders and Dr. Smith were also present, in their name and on his own part he thanked the Association heartily for the honour which had been done them by electing them as the first batch of Vice-presidents. Speaking for himself he feared that he could not be looked upon except as a book placed upon a shelf to be taken down occasionally for reference, so long as the binding held the leaves together. However, whatever the worth, he thought he might venture to speak not only for himself but also for his friends, whose services he would always be at the command of the profession and especially of this Association, which had, by their election, established a system of permanent officers. In making that comment he was never disposed to add a rider to it, and to say that in creating permanent officers there was a certain degree of danger. They might elect persons who would always attend, and who would always want to talk, and, therefore, there should at all times in making such an election be a certain amount of discretion exercised, because an Association of that kind which had favoured from the first to be a truly representative one, if it had a vast number of permanent officers would cease to have its character. They wanted from time to time to have the introduction of new blood so that the Representative Board should always represent not the past men but the present men, and keep always in view the current feeling of the day, not the current feeling of yesterday. He thanked the Association for the position which had been given to himself and his fellow Vice-presidents. He would now to call their attention to another matter. He was asked to propose that the Association should send a vote of condolence to Mrs. Spence Bate, who, as they all knew, had lost in her husband a man of great worth as a scientific man, of great worth as a

professional man, and of great worth as a personal friend. I had known Mr. Spence Bate for something like half a century, and I had found him always a true friend and a wise counsellor. Though apt to propose things that others could not always agree with, still, if he made such proposals he was the first to yield to what seemed to him fair argument. Such a man was of very great value. A man who made ready proposals led to ready and off-hand discussion, and that proved of very great value in keeping them on the right line. Mr. Spence Bate would sometimes suddenly try to pull them on to a siding, but when it was shown that that siding led to nowhere he was the first to assent and get on to the main line again and give his hearty support to a resolution which possibly at the first he might not have conceived to be of value. He did not think they could exaggerate their appreciation of such a member, nor could they test too strongly the grief they felt at his loss, not premature, for he was seventy, but still there were many men of seventy among them, and some of the oldest and best friends he had ever had lived to reach the age of ninety, so that Mr. Spence Bate's life might be said in some sort to have been cut short. Most people would, however, be very willing to take seventy as an average if they could secure to themselves as useful a life as Spence Bate had enjoyed. He hoped the Association would agree to the resolution which had been placed in his hands.

The CHAIRMAN said, as President of the Representative Body and as occupying the place, for the time being, of President of the Association, he most regretfully seconded the resolution. Those who had worked with the Association from its commencement best knew the value of the man they had lost. Apart from any social or scientific work which belonged to him, as a member of the Association at its very earliest date, as a promoter of dental reform movement before the Association was in existence, they remembered Mr. Spence Bate, and they felt his loss. The resolution was that the Secretary be requested to convey to Mr. Spence Bate the sincere sympathies of the Association in his irreparable loss.

The resolution was unanimously adopted.

The CHAIRMAN said the Association had had under its consideration, for some time past, the fact that the public and also the Government were very badly informed in the matter of the treatment of teeth of young people, and of soldiers and sailors. Several

their members had been at work on this question. A short time ago they memorialised the Admiralty on certain matters, but had not succeeded so far in eliciting a satisfactory reply. He hoped, however, that the matter might still be within their power to take up again. On the present occasion they had to receive a report from the small Committee that was appointed last year. At the meeting last year, a sum of £10 was voted by the Association to Mr. Fisher, of Dundee, which he was to spend in elaborating certain books which would be useful to the Secretaries of Branches, for obtaining statistics from charity and workhouse schools, the object being ultimately to guide the Association in bringing pressure to bear upon those bodies to have the teeth of children looked after by qualified dentists. He would ask Mr. Fisher to make a statement as to what he had been doing.

Mr. W. FISHER (of Dundee) then read the following report :

I have to express my thanks for the vote of £10 granted me at the last Annual Meeting to meet the necessary expenses in publishing a British Dental Association case book for the tabulation of dental disease in children's teeth.

I have been able to provide 100 books, which consist of two parts for reports, and 112 pages with diagrams of the temporary and permanent teeth, each book being capable of receiving the notes of fully 1,000 cases.

Mr. Fisher here passed around the case books, and illustrated the use of them on the black board.)

He would now beg leave to move the following resolutions :

I.—That these case books be sent to the different Branches with the request that the Branch will tabulate the condition of the children's teeth in their district, which are embraced in those schools which have medical officers, and who have not yet dental officers on their staff.

II.—That in the event of any member of our Association knowing of any of the aforesaid schools—not embraced in the district of any Branch—and remaining unexamined, he will apply to the Secretary for a case book, and endeavour to have the school examined and reported on.

III.—That the books be returned filled up, prior to our next Annual Meeting, with the name of the secretary of each school included in the report.

Mr. BROWNE-MASON referred to some data that Dr. Christopher Harding, fleet surgeon, had given him with reference to the teeth of the blue jackets of the Royal Navy. He met Dr. Harding last

year in Dublin, and had travelled with him into the West where the meeting was over, and learned that he was very much interested in hearing what had been discussed at the meeting. Dr. Harding had endeavoured, as fleet surgeon, to wake up the Admiralty on this point, and he subsequently sent him some very copious notes which he had taken whilst on board one of Her Majesty's ships, as the result of inspecting over 1,000 men. The report was a most valuable one.

The CHAIRMAN said the Committee had not thought proper to take any steps during the last year in the matter. The reception with which their representations had been met, had not encouraged them to take any immediate action. They rather relied upon the matter being brought before the Association again, and upon its being taken up by the public press.

Mr. G. CUNNINGHAM (Cambridge) said he thought they ought to ascertain clearly whether this work was to be carried out or whether it was to be let alone. They as an Association requested the Admiralty to afford facilities for the examination of the sailors' teeth, and their request had been met in the way described; but now they found that the work had already been done by a fleet surgeon. The very information they had asked for was now in their hands, and they ought to make some use of it. If it was not the desire of the Association that this matter should be continued, then they knew what to do independently; but if they had a committee he maintained it ought to do something, and they should not allow themselves to be discouraged more especially when they found that a Medical Officer of Health had taken some action. There was one remark made in that report to which he wished, if possible, to call the attention of the public. They wanted public support, and he believed that if they were convinced that they had the support of the public the Committee would not hesitate. It was simply because they were not certain on that point that they held their hands. The fleet surgeon referred to made this statement, that whilst serving on board one of Her Majesty's ships he was one day horrified by the sick berth steward producing two bottles—Lazenby picture bottles—one of which was full and the other two-thirds full of teeth which the man said he had extracted in ten months without the knowledge of the medical officers of the ship, and was not a little proud of the achievement. He appealed to the Association whether they should allow such things to go on.

ated that they desired the help of the public and of the press to take up this question, and if they could obtain that he thought they could induce the Admiralty to take a proper view of this subject.

Mr. L. MATHESON (London) said that he thought Mr. Fisher had taken a very considerable step in the right direction, and he took much pleasure in seconding the resolution which that gentleman had proposed.

The CHAIRMAN said he was much obliged to Mr. Cunningham for reiterating that the committee thought it desirable if possible to create a public opinion on the question. He believed that the press would be induced more fully to interest themselves in the subject if it were brought before them in the shape that Mr. Fisher proposed. They were much obliged to Mr. Fisher for the trouble he had taken, and the only objection he could see to his resolutions was that they were rather too binding. They gave many directions. It must lie greatly with the secretaries of branches and with the councils of branches, to find out the best way of using these books, but if they could obtain such suggestions the books would afford, they might be able to make a very strong case to put before the public with reference to the schools. They could get as far as that they might perhaps then include training ships and also the full service ships, and eventually the army. A question of this kind, however, was not to be decided by assault, but by patient, persevering, and judicious discussion. Perhaps it might be considered advisable to refer the string of resolutions to the Representative Board. He thought himself that they were too specific, and would embarrass men who might be able to use the books to greater advantage if they were not bound down by such restrictions. He merely threw out the suggestion and would then leave the matter in the hands of the Association.

Mr. STOREY said he thought it would perhaps be better to carry the resolution first, and then afterwards to move that the matter be referred to the Representative Board in order that they might take a uniform action throughout the different branches. He trusted that the resolution should be adopted, and that then it would be referred to the Board for further consideration.

Mr. FISHER said that he thought a book should go to the secretary of every branch, and that each branch should work the

district. The presidents would ask for volunteers: they would ask young men who joined the branches to take up this work. He thought the matter would be very simple if they were unanimous. The books should be sent to each branch, the president and secretary should work it, and then return it to the Association.

The resolution was adopted.

Mr. STOREY moved:—"That the question be referred to the Representative Board to formulate a plan for the working of the registers in different branches."

Mr. BROWNE-MASON seconded the resolution, which was agreed to.

The CHAIRMAN said there was a question which was gone into at some length in the last issue of the Journal, and to which their attention was especially called. It was with reference to some propositions made by Dr. Rentoul, of Liverpool, referring to the formation of medical clubs, by means of which people with small incomes could receive medical advice upon the payment of small sums of money. The whole system was laid before the profession in the Journal. The dentists were included among the medical attendants, and it was thought advisable, at Dr. Rentoul's request, that the matter should be placed before the members previous to their annual meeting. Certain resolutions proposed by Dr. Rentoul towards carrying out his system were laid before the British Medical Association, which met in Leeds last week, and according to the report were carried unanimously. The question was a wide one. Dr. Rentoul had formulated a system of fees for medical men, and he had also formulated a system of fees for dentists. He need hardly say, without entering into the question of the fees suggested for medical men, that the fees suggested for dentists were not quite the kind of fees or the system of payment that dentists themselves would suggest. They were not made with that familiarity with dental work which was necessary for formulating such a scale of charges under such circumstances. Dr. Rentoul was very anxious that attention should be called to the matter at that meeting, that probably some resolution to take his suggestion into consideration might be passed, and by that means help him to pursue this course of reform with reference to the medical treatment of poor people, upon which he had entered, and which he had been carrying on for the last

seven years. He would ask the Secretary to read some correspondence that had taken place with Dr. Rentoul, and also resolutions which he suggested.

The letters and resolutions were then read.

The CHAIRMAN said it would be seen from the correspondence, that although this question had been referred to the Dental Association by the author, it was at present hardly in a condition for full discussion, but perhaps it had better be referred to the Representative Board.

Mr. G. CUNNINGHAM said it was manifestly impossible to discuss the matter at that meeting. He would move, "That the Representative Board be requested to examine the proposals made by Mr. R. Rentoul, and to take such action as they deem best in the best interests of the public."

Mr. SPOKES said he had followed very closely the report of the discussion at the British Medical Association, and he found that the matter had been referred to the Council.

Mr. J. DENNANT said he thought the word "profession" should be included in the resolution. He would move that as an amendment.

Mr. MANTON seconded the amendment, which was carried.

The CHAIRMAN then put the resolution as amended, "That the Representative Board be requested to examine the proposals made by Mr. R. Rentoul, and to take such action as they deem best in the best interests of the profession and of the public."

The resolution was agreed to.

The CHAIRMAN said he had now to intimate that in the ordinary course of events Mr. Daniel Corbett would have vacated the chair, and would have probably received from the Association the vote of thanks to which he was entitled during his absence. Before vacating the chair, as his representative, he would ask some gentleman to propose a vote of thanks to Mr. Corbett for his services as President during the last year.

Mr. F. CANTON said he should have very much pleasure in proposing a hearty vote of thanks to Mr. Corbett for having acted as their President. He was sure that they could all understand his not being present that day, as he was not very young, and would have had some distance to travel.

Mr. COFFIN seconded the resolution, which was carried by acclamation.

The CHAIRMAN said he had a list of gentlemen to whom they

were greatly indebted for their being able to meet in that place and for the privileges that had been accorded to them. The Mayor and Corporation of Brighton. Mr. Redman could say more about their generosity to the Association than he was able to do. They had also to give a vote of thanks to the Resolution Committee, to the Exhibition Committee, and to the Microscopic Committee. He had also to propose a vote of thanks for the mercies not yet received, that was to say, to the demonstration and the readers of papers; also to the exhibitors and the curators of the Pavilion.

The resolution was agreed to.

The minutes of the meeting were then read and confirmed.

Mr. J. Smith Turner then vacated the chair, which was taken amid applause, by the President-elect, S. LEE RYMER, Esq., who proceeded to deliver the following inaugural address.

GENTLEMEN,—Amongst the several marks of favour and honour which I have experienced from time to time at the hands of my esteemed professional brethren during the long period extending over thirty-three years, none have been more appreciated by me than this last token of your confidence in electing me to the position of President of the British Dental Association for the ensuing year, and I desire, naturally, in the first place, to thank you in all sincerity for the great distinction thus conferred upon me.

In accepting the chair, I need scarcely remind you that I do so under the shadow of domestic sorrow, to which I allude only in order to embrace the opportunity of gratefully acknowledging many touching expressions of professional sympathy, both public and private, with myself and family in an irreparable loss. Identified with such genuine sympathy, and well knowing what would have been the wish of my late honoured wife under the circumstances of the situation, I take it to be my duty to be present to-day so that, in the name and on behalf of the South of England Counties Branch—now including the six important counties of Sussex, Kent, Surrey, Hants, Berks, and Wilts—I may accord to all a most hearty welcome to this beautiful town of Brighton where we are assembled to celebrate our ninth Annual General Meeting. True it may be that the locality does not furnish so many means of outside instruction coupled with entertainment as is afforded by the great centres of manufacture and of Government works, but, nevertheless, I see no reason why we may not be

ward to an entirely successful professional as well as social
 eting here, and then the efforts of those entrusted with its
 anisation will be well rewarded.

n entering upon the tenth year of the existence of the Associa-
 a, and glancing over its past history, the record, as it appears
 me, is one of very remarkable success—success indeed far ex-
 ding my most sanguine anticipations. I am not unacquainted
 n the fact that there are, amongst our friends, those who would
 e to have witnessed something approaching to a scene of
 nsformation from a crude and chaotic condition to one of almost
 enial splendour, accomplished with lightning rapidity; but all
 erience teaches that in great undertakings, such as ours, in-
 ring dealings with the position of to-day and for the time being,
 also the charge of a mission to carefully scan the political
 izon and to regulate the educational requirements of the
 re, the work can only be carried on safely and wisely step by
 , albeit in full confidence of success, so that whatever obstacles
 e to be encountered—and such we may rest assured will prove
 her few nor insignificant—a determined executive, supported
 firm and united constituency, will be enabled to follow up the
 ntages already secured by an undaunted progressive march.

mpatience, despondency and want of faith are the three chief
 lysing agencies in the growth of good works. Perish such
 ences so far as each one of us is concerned! What we *aim*
 s *perfection*, and very properly so, although I suppose few, if
 of us, are sanguine enough to hope to attain to that exalted
 dard. At the same time, the higher we do aim the nearer
 ve likely to approach thereto. In another fifty years what
 ges will have taken place at the present rate of terrestrial
 ncement! That future period will, no doubt, reveal something
 a new world, and yet we who are now assisting at this Brighton
 erence are actually and practically engaged in—at least partly
 oulding the events and conditions not only of the next half-
 ury, but even of time far in advance of its completion.
 ein is considerable responsibility, as also ground for lofty
 t—effort to be undertaken in assurance of substantial result
 if this result be not at once apparent in its entirety—

“ We must believe, for still we hope
 That in a world of larger scope,
 What here is faithfully begun
 Will be completed, not undone.”

The history of the art and science of dental surgery, especially under modern aspects, has been so often and eloquently described on occasions like the present that it is altogether unnecessary for me to occupy your short and valuable time by reiteration. You know the loyal and persistent exertions of able men have thus far culminated in giving us such a fixed legal status that the national recognition of dental surgery, as a profession, is an accomplished fact. It is with the object of developing the power thus accorded that the British Dental Association exists.

Its memorandum and Articles of Association and bye-laws need only to be cursorily perused to prove that in this Association we possess an institution of varied efficiency, thoroughly adapted to its purposes.

Firstly, of course, there is the main object, namely, that of carrying out the spirit and provisions of the Dentists Act of 1878. Following in the wake (besides looking to the duty of caring for brethren in distress) are the several items coming under the very unfettered description of "watching over and furthering the general interests of the profession." The field of action is, in fact, almost without limit. Moreover, I think those who have watched the working of the machinery of action of the Association will agree with me that on the whole that machinery is well adapted to the end in view.

Now I will ask you, if you please, to consider well the force that can be brought to bear, as need arises, upon the Imperial Parliament by this British Dental Association—a body composed, as it is, of influential members, forming part of almost every electoral constituency in the Kingdom. I have no intention of dwelling upon the subject, but of this I am certain, that your reflections will show you that here we possess an instrumentality of immense and vital importance. Then consider the effect, in the light of science, of the annual gatherings such as that of to-day, and of the benign social influences engendered on these great and exceptional occasions, besides valuable analogous results attained and yet attainable in the regular working of the several branch meetings. If the Association had no other aims than those I have indicated, it would be entitled to all our support. But consider besides the delicate department of operations included in our programme and known as "weeding out"—a necessary but unsavoury piece of business which has been carried out conscientiously with as much success as could have been expected under the limited powers of

ion hitherto available. It must be remembered that our profession has not yet emerged from a transition state, and that this particular work is therefore, of necessity, carried on slowly and with liberal consideration. From the exigencies of certain localities as well as of individuals, certain practitioners of respectability have always thought themselves able to keep strictly within the limits of professional dignity. In many such cases forbearance, coupled with friendly intercourse and advice, have resulted in such an abandoning all objectionable practices, and becoming in every sense respectable members of society and welcome candidates for admission to the Association. Reclamation is a far more pleasant way than prosecution. Unfortunately the advertising quack, in his specious modes of victimising the public, is still in vigorous action. The Association has him in view not without hope of giving him his quietus. But here the public themselves must be instructed to assist for the sake of their own protection. Argument with the natural quack is simply waste.

“ Let Hercules himself do what he may
The cat will mew, and dog will have his day.”

have alluded to these points as especially requiring consideration not only by members of the Association, but by every dental practitioner who takes a real interest in his calling, because it will be seen that whilst many large questions are before us, such as those connected with education and examination, and the not probable necessity in the near future of an application for extended authority under the Dentists Act—a proceeding of supreme professional importance—it will be seen, I say, that through the influence and agency of the British Dental Association only can these questions be successfully grappled with and solved. If this view of the situation be conceded, it becomes clear that the duty of good men and true is to rally around the Association. The greater the number of its members the greater its power—an objection which has often been made before, but which bears relation. The roll already includes many hundreds of names and is annually increasing in number ; but having regard to the demands of a pregnant future, there should no longer be hesitation, on the part of those who have hitherto rested content with passive quiescence in the aims and achievements of others doing the work, themselves coming forward to lend a helping hand—in a word, to come practical. Good wishes are all very well in their way, but

without action they bear no fruit. To all who care for their calling I should like to commend an extract from Dr. Johnson's essay entitled, "The fondness of every man for his profession," written in 1750 and published in the "Rambler." The motto prefixed to the paper, from Elphinston, is, "Choose what you are ; no other state prefer." Johnson says :—"The passion for the honour of a profession, like that for the grandeur of our own country, is to be regulated, not extinguished. Every man, from the highest to the lowest station, ought to warm his heart and animate his endeavours with the hopes of being useful to the world, by advancing the art which it is his lot to exercise, and for that end he must necessarily consider the whole extent of its application, and the whole weight of its importance. But let him not too readily imagine that another is ill employed because, for want of fuller knowledge of his business, he is not able to comprehend its dignity. Every man ought to endeavour at eminence, not by pulling others down, but by raising himself, and enjoy the pleasure of his own superiority, whether imaginary or real, without interrupting others in the same felicity. The philosopher may very justly be delighted with the extent of his views, and the artificer with the readiness of his hands, but let the one remember that without mechanical performances refined speculation is an empty dream ; and the other, that without theoretical reasoning dexterity is little more than a brute instinct." To this enlightened description of what should be expected of men in regard to the improvement of their callings according to the talents of each individual engaged (published 140 years ago), let me add a few modern words bearing upon the subject of professional responsibility from the interesting presidential address of Dr. Lloyd at the Annual Meeting of the North Wales Branch of the British Medical Association, delivered last year. They are these :—

"We are too lethargic in the matter of striving for and protecting our own interests. Medical men would apparently, by their action, make the outside world believe that they were too much engrossed in their daily work to undertake and organise for the protection of their rights and in the correction of manifest imperfections in the laws which affect them. There are hopeful indications that we are gradually acquiring the habit of bestirring ourselves in the cause of our rights and interests. Every member of the profession has a voice in the matters which affect his interests, if he will trouble himself to use it, and it is plainly our duty collectively to

make our voices heard when the occasions arise which demand our serious attention."

The aim of all humanitarian effort is the promotion of happiness in the world, an object so noble in itself as to amply repay in its exercise whatever energy may be expended by those who take part therein. Towards the accomplishment of that end, organisations both numerous and varied—religious, philanthropic and scientific—are in busy operation, each with sub-divisions, we dentists being classed as belonging to the field of labour assigned to medical science. In this great field we find conscientious workers manfully doing battle with extant diseases afflicting the human frame; also straining every capacity to discover means of prevention so as to ward these off altogether. Thus, through the faculty have the applications of sanitation, together with the spread of knowledge amongst the people of the principles of rational living, resulted in a marked decrease of average mortality even within the period of our own recollection. There are not wanting scientists, amongst others Dr. Richardson, who consider the present average duration of human life ought to go on increasing until the attainment of 100 years. It is undoubtedly true, whatever sceptics may say to the contrary, that quite a considerable number reach that age or an age closely approaching a century. Leaving alone cases of merely conjectured great ages, there are now living in this country some well authenticated cases of centenarians. I myself not long ago saw an old lady of over 100, the inmate of a Union, with the faculties in good working order. From time to time we read about others such, although generally, perhaps, in the obituary chronicle. Within the last few weeks I have come across a few—one the case of Mrs. Voss, who died on the 17th of last month at Shortlands, in Kent, aged 104 years. She had been the mother of ten children, her hearing, sight, and memory were unimpaired, and she was able to read and write without spectacles; another, the Sister Bonaventure, who died at Gand some three weeks back. She was born at Menin, August 23rd, 1788, and had been a Sister of Charity for seventy-eight years, so she would have attained the age of 101 had she lived until to-morrow. Then there died on the 10th of April of the present year that very remarkable and well-known man of science, Monsieur Chevreul, aged 102. M. Chevreul retained his faculties and was a regular attendant at the Academie des Sciences and other learned Societies almost to the last. Recent cases might

be multiplied, but I must content myself with mentioning two others as illustrating the fact that the centenary age is certainly reached. At Coosat, a village near Athlone, Margaret Mulschill, who is turned over a hundred years of age, gave evidence on Monday, August 12th instant, that is Monday in last week, at a coroner's inquest relative to the death of Honora, her twin sister. The old ladies lived together, and on the previous Saturday, when Margaret went to market she left Honora at home in good health. On returning she found her lying dead on the sofa. Death natural and painless had resulted from failure of the heart's action. John Walsh, an inmate of the North Dublin Workhouse, died only last week in his 108th year. He worked as a labouring man until ten years ago, when he fell in for £4,000. This he entrusted to a friend, who becoming bankrupt, left poor Walsh to finish his days in the Union. In such records we possess a most encouraging incentive to perseverance in pressing on all means likely to swell the roll of the long lived and, perhaps, by-and-bye the statistician will really be able to mark down the average at 100 years. In the meantime I should be contented to see the applications of science so far successful as to place it at the average of the Israelites of old, as recorded by the Psalmist, three score years and ten. There is abundant evidence of the possibility and even probability of that average being reached. When we hear of a well-known statesman of nearly eighty being knocked down the other day in Piccadilly by a cab, quickly recovering himself and overtaking the driver to take his number, it is only to be regarded as an instance not at all infrequent of vitality of those of seventy years and upwards. There are nearly one hundred living people of hereditary title who have passed the octogenarian figure, and plenty are to be found in the various grades of society, especially among the class known as annuitants. I dare say Dr. Wheelhouse in his able address of last week before the British Medical Association at Leeds, had in view the idea of a largely augmented lease of life in the world when he referred to the yearly additions to the vast stores of medical knowledge and the mighty work being done in the diminution of pain and suffering—foreshadowing the time when by the spread of sanitary and other sciences the whole human race would be protected from the evil influence of the seeds of disease. At the same meeting, and pointing in the same direction, Dr. Brindley James advocated a measure worthy of all support, namely, the appointment of a

Cabinet Minister of Health. In our speciality as dentists, we possess potent elements applicable towards the march onwards. Health and life are dependent upon proper assimilation of food, which requires previous and due mastication. Then we are interested in an especial manner in the question of the improvement through parentage and rearing of the future physical status of mankind—which of course includes the teeth—and of all means to be employed in the process. A single point. In early life wholemeal bread should enter largely into the diet table as containing completely the requirements of perfect bone development. But it is now stated that its consumption is not an unmixed advantage, as the outer cuticle of the wheat contained in the wholemeal bread is of a very irritating nature, and that the phosphates, so invaluable for building up the human frame and contained in the outer covering of the grain, cannot be properly separated and absorbed by the stomach. There is scope then for fuller enquiry as to the proper mode of preparing this food for exhibition. It seems a small matter, but attention to trivials often leads to important results and the attainment of great ends.

Towards the earnest endeavours of the day to add to the public welfare, be it ours as a profession to contribute a large share. There is a cause to work for, for there are means of action at our disposal. By encouraging the one and making good use of the other we may surely indulge the hope of leaving the world better than we found it. Thus will the lines of Edwin Arnold become applicable to each one of us :—

He dying leaveth as the sum of him
A life count closed, whose ills are dead,
Whose good work is quick and mighty, far and near,
So that fruits follow it.

In conclusion allow me to thank you for your indulgent attention to the observations it has been my privilege to address to you, and to express an earnest hope that the several arrangements of this meeting will not disappoint expectation, but rather, to adapt to the present proceedings the words of the respected Mayor and chief magistrate of the borough on the departure recently of the Shah of Persia, "that you will be enabled to regard nothing as more pleasing than the recollections of Brighton—the sunny town of the south."

Mr. F. WEISS said he hardly thought it necessary to say more than a few words. It was his great pleasure and duty to propose

a vote of thanks to their President for the words which he had addressed to them. They knew his practical good sense, and they knew also, and no one knew it better than himself, who had known him for half his lifetime, the goodness of his character, and the ambition that he had from the beginning simply to serve his profession and to do that which he thought would advance not only its interests but its status. He asked them to give their best thanks to Mr. Lee Rymer for his address.

Mr. WILLIAMS said he had much pleasure in seconding that vote. He had enjoyed close friendship with Mr. Rymer for thirty-three years, and he could only say that it gave him great pleasure to be present, and to have this opportunity of showing his esteem for their President.

The resolution was carried by acclamation.

The PRESIDENT said he thanked the members most sincerely for their kindness in proposing and carrying this vote. He was very glad that he had been able to come amongst them, and in doing so he knew he was amongst those who were sympathisers and kind friends. He had intended some weeks back to endeavour to prepare an address of some interest on the subject of the influence of dental science with regard to a seventy-years' average of human life. From unavoidable circumstances he had only been able to give a little suggestive sketch, but that the attainment of a seventy-years' average was possible he had no doubt whatever, and since composing the paper he had been very much confirmed in his views by what he had heard, especially from the experience of Sir John Tomes. He repeated his hearty thanks. He had now to state that they had amongst them a deputation from Paris. The Committee of Organisation of the International Dental Congress had sent a special delegation. The gentlemen present were M. le Prof. Ch. Godon, directeur adjoint de l'Ecole Dentaire de Paris, secrétaire général de l'Association générale des Dentistes de France ; M. le Prof. Paul Dubois, président de la Société d'Odontologie de Paris, éditeur de l'Odontologie ; and also M. le Prof. Remonnet, trésorier général de l'Association générale des Dentistes de France. They also welcomed Mr. Bonwill, of Philadelphia. He could assure those gentlemen that they received from the Association a very hearty welcome.

M. DUBOIS then returned thanks.

Mr. G. CUNNINGHAM said he wished to urge that the Association should reciprocate the attention that their French brethren had

own them in coming to be present by appointing an official delegate to be present at the congress that was to take place in Paris, and at which, he believed, a number of societies would be represented from America, Norway, and other countries. Their French friends were very anxious that England should be represented, and they would esteem it highly if any members of the English profession who intended visiting Paris during the congress took—which was to be from the 1st to the 7th September—could be appointed to officially represent the Association. Any member of the Odontological Society, or belonging to that Association, would be eligible, but what they wished to guard against was this, they did not want quacks to go from England and get admitted to societies abroad that they could not get into at home. A Frenchman had been appointed in England for the purpose, vouching for such of their English brethren as might visit the Congress, and he (Mr. Cunningham) was the secretary to whom application might be made.

Mr. BONWILL (Philadelphia), in response to a call from the Association, said he had to thank the Association very much for their cordial reception, and for the kind words which had been spoken. Whenever he had gone he had been met with only one feeling. His visit to England, after thirty years' long work, had been undertaken with the hope of seeing something that would be of value to his fellows at home and also to himself, and if possible to leave them and him some work of compensation, so that his tour might not have been in vain. He had something to show them at the end of his time, and he hoped to receive their kind indulgence. He expected that on returning from their shores he should have a report to make which would repay him for the extra effort of re-crossing the English channel from Paris in order to be present that day. He was proud of dentistry, and of the wide field that it opened to all who were willing to work, and was glad to find that the time was coming when its practitioners would be hailed by other scientific societies as their compeers in every respect. He hoped that his countrymen and himself would continue to meet with the appreciation and commendation of his English brethren. He had been very much surprised by surprise at his cordial reception, which would be a reminder to him of the lesson that it was well "to come and to wait."

The meeting then adjourned for luncheon, which was served in the Pavilion, and re-assembled after having attended the interest-

ing demonstration on "Practical Microscopy" by Mr. which full notice will be found elsewhere.

AFTERNOON MEETING.

Thursday, August 22nd.

Mr. J. SMITH TURNER in the chair.

The paper by Dr. Cruise, of Dublin, on "The Use as an Anæsthetic in Dental Operations" was then Mr. DENNANT. It appears together with the other papers on anæsthetics under the head of Original Communications.

The paper on "Chloroform" by Mr. BOWMAN M.L.D.S., of Edinburgh, was next read. (See Original Communications.)

The paper on "Certain Anæsthetic Mixtures, with reference to those in use in Dental Surgery," by F. HEWITT, M.D., M.A.Cantab. was next read. (See Communications.)

The paper by DUDLEY WILMOT BUXTON, M.D., B.M.R.C.P.Lond., on "Recent Researches upon Oxide Narcosis and their bearing upon the practical conditions when and how Laughing Gas be administered" then read. (See Original Communications.)

Mr. BAILEY said, that as dentists he supposed used nitrous oxide, and the only question to be considered was whether they should use ether or chloroform. With very large experience he was very glad to see that one of the most able papers that they had had for many years in the British Medical Association, Mr. Pridgin-Jones gave his verdict after fifteen years' experience emphatically in favour of ether, when given properly. Ether must be given properly. They had heard a great deal about apparatus, and apparatus they must have if they wished to do the thing well. His friend Macleod said that chloroform was so good because a little apparatus was required. Chloroform was never given with a very good apparatus. There had been no chloroform giver in the world like Mr. Clover, and

atus was perfect. They had now superseded it by using ether, and they used Clover's gas and ether apparatus. Forty or forty seconds was the length of the time given by Dr. Cruise after giving ether, but surely it was not worth while running the risk of bad sickness for thirty or forty seconds' anæsthesia using ether when they could give quite as much as thirty or forty seconds by simply giving gas. With regard to the examination of the heart, he thought it should not take place. A patient came before him to be anæsthetised; the patient expected to be anæsthetised. What were they going to do if they found the heart diseased? They still had to anæsthetise somehow, and therefore if the operator examined the heart and found something wrong, it was likely to make him more nervous. Every patient that went under the influence of ether was treated with exactly in the same way. He therefore thought he did not gain anything by examining the heart. Mr. Weston said they might give gas with a diseased heart. He knew one distinguished lady as a patient for many years, who would not have a tooth out because she had heart disease. He told her that she had better have a tooth out under gas, but she could not have it out without gas or she was sure to die. She had the tooth out, but three weeks afterwards she died suddenly. Of course if she had died under gas it would have been said that it was the gas. His impression was that in such a case it would not have been the gas that killed her.

There was another question about the suffocating apparatus. That apparatus of Dr. Cruise's was the suffocating apparatus; they could not help having the whole mass of ether on the lungs at once, and if any one took three or four ounces of ether on the lungs they would find that the result was suffocation. There was no suffocation about Clover's apparatus; the administration was as easily and as happily given as possible. Then as to the quantity spoken of—four ounces. He was quite sure that his anæsthetic friends would not give four ounces of ether for a tooth; he had never seen such a thing in his life. In order to prolong anæsthesia from forty-five to sixty seconds—they certainly would require with proper administration more than half an

ounce of ether, which was a very different thing and was rather astonished to hear that ether was said to be valuable, because they could have one tooth out, and a patient could do something in half an hour. A little while a dentist came to him with the toothache, and they proceeded together to a brother dentist. His tooth was out, and he went back to a lady on whom he was operating, she did not know what had happened in the interval, and it was not a question of half-an-hour. He thought that after all the best plan would be to shew the apparatus to him (Mr. Bailey) was in the habit of using. That was very much more practical to a number of scientific men. As to sickness, it might happen one day that a patient would be sick, and another day he would not be sick. They could not prevent sickness in any way, but it must not be said that ether was better than chloroform in that respect.

Then as to paralysing the respiration, he was perfectly satisfied from his experience that ether stimulated the heart, and might paralyse the respiration. In order to obtain accurate data a very large number of cases must be tabulated. Macleod spoke really as if chloroform never killed, and as if it was only the fault of the man if he gave it. Mr. Clover gave chloroform 5,000 times, tabulated the results, and out of that number he only had two deaths, so that was a proportion of one in 2,500.

With regard to ether he did not think that they could say that there was more than one death in 25,000 administrations even if there was so much as that, and that really made the distinction to his mind. He should like to add that in the administration of nitrous oxide no case of death had been recorded, although he knew of 250,000 cases of its administration. The Hyderabad Commission had been set up to, but there seemed to be some little mistake as to the results of which that was conducted. The results given were a confirmation of the experiments here. The Medical and Chirurgical Commission found that the heart was paralysed first. He did not think why their Indian friends should be more competent than English brethren. They were delighted to see what Dr. D. was doing, and he thought it was for the younger men to be forward to some absolutely perfect anæsthetic. The preparation brought forward by Dr. Hewitt looked very

e thought he might have made a mistake as to the air with gas. He had himself kept up the anæsthesia for operation lasting forty minutes with gas, and air must be used under those circumstances. The mouth-piece was away in giving gas exactly the same as in administering

The reason why one did not use gas for prolonged operations was because the blood changed colour, which inconvenienced operators, and also because of the immense expense it would be. They could not do it in the case of every patient. If Dr. Hewitt could in any way absolutely perfect the apparatus he had brought forward he would be doing a boon to the profession for which they would one day be glad to thank him.

Dr. Bailey had spoken with regard to the colour of the patient. Dr. Bailey never found that his patients got blue. He was never troubled with regard to asphyxia. He knew this, and they gave ether in the way which he would presently show. Patients had no discolouration whatever, and they could breathe on the ether after the gas as easily as possible. They thanked Dr. Buxton for his paper. He had carried out his suggestions to a very large extent, and although the paper was complicated and perhaps difficult to understand, he had clearly shown them what they all wanted to know—that carbon dioxide was a pure anæsthetic independent of asphyxia. They must not be afraid of it. Somebody might die of it; but it would not be by asphyxiation.

Dr. Bailey then exhibited the apparatus by means of which he administered gas and ether. He said it had no inspiratory, but only an expiratory, valve, and that was an advantage over the Clover. The apparatus had an india-rubber air-cushion, so that it would fit absolutely to the face. Of course they should have a gag in the mouth, and if they held the left finger under the chin, they would constantly keep the mouth open. His ether apparatus was just as simple as the gas. It consisted of a canister, which he filled every day with four ounces of ether—it would hold six—and was fixed to his waistcoat. By an arrangement of taps and tubes he could first give gas only. The principle was very simple—first to give a sudden whiff of gas; after that the gas could be turned off and pure ether administered.

Dr. Hewitt seemed to think that the gas could not be given after the ether, but his (Mr. Bailey's) practice was always invariably to give a whiff of ether for a few seconds and then turn the gas on again. The patient was calm and beautiful and ten or a dozen teeth could be extracted. There was no complication in the apparatus when it was properly used. He could also, by means of a tap, introduce air, so as to give both air and ether. In a long operation such as abdominal section, they need not give pure ether, but an admixture of ether and air. The apparatus could not be more simple, and if an accident occurred, both hands were left free. With regard to accidents, he thought that in the case of stopping of respiration, the essential thing was to forcibly compress the chest; by that means they got the gas out of the chest and then they might restore the respiration without putting the tongue forward or doing anything of that kind. Of course if the case was an exceptionally bad one, other measures would be necessary. They used the prop in the mouth in dental surgery, but he always kept the prop in the mouth in general surgery as well. The fear of the apparatus had been spoken of, but in his experience he never had a patient who suffered from that fear, or who refused to put the prop in the mouth. He always explained that that was the way the gas was given, and he never found any objection raised. The complication of apparatus was really a great bugbear, but by the means he described the complication was as simple as putting a towel to administer the chloroform. He should advise Mr. Cruise, if he was going to give ether, to do so with an apparatus of that kind, and he would advise Mr. Macleod never to use chloroform at all for a dental operation. He need say nothing about dangers and difficulties. The difficulties they all knew and in his experience he had met with cases where he should not give gas again. The whole thing was that everyone must learn by experience.

When lecturing at the hospital in Leicester Square, he always urged upon Students that they must not think that any apparatus was complicated until they had absolutely taken it in hand and seen what it was like. By the use of his apparatus no one was required in the room. There was no heating, no water required. He had heard of a great many people requiring hot water, but he had never used it. If

wanted say four teeth extracted he would give gas alone. In the longest dental operation, he would give gas first and a little ether, and would have the patient ready in a minute and a half. He advised dentists to keep nothing but gas in the house. He doubted whether they should ever keep ether and certainly not chloroform. He was very pleased to hear that one of his friends told him that he gave only gas and he never had ether or chloroform. Another friend said he would only use ether, but after all it was for each man to do what he thought best. He hoped they would understand the manner in which he had been talking, and if he was unable to be present at the demonstrations on the following day he would like to show the very easy way in which ether and ether could be given.

The CHAIRMAN said they were very greatly indebted to Mr. [Name] for the trouble he had taken in coming down to their meeting, and for the information he had afforded. Their friends had had it pretty much their own way, and he was sure the Association was very much indebted to them. They must not forget, however, when discussing the large number of teeth that could be extracted during an anæsthesia, that there was just the danger of taking out too many teeth at once. He would now suggest that the discussion be adjourned to the following day.

The meeting then adjourned.

At 5.30 a special business committee meeting was held, at which the presence of secretaries of branches was specially invited.

Prior to the garden party and soirée on the evening of the 1st day, Messrs. Redman and Dennant entertained a small number of representative guests at dinner at Booth's restaurant in East Street.

On the evening the members and their friends met again at the garden party and soirée given by the President of the Association and the members of the Southern Counties Branch at the Pavilion. There was plenty of excellent music. The band of the 1st Sussex Artillery Volunteers (by permission of the commanding officers) played at intervals through the garden, while at the other end of the building, under the superintendence of Messrs. Gates and Roe, a mixed vocal and instrumental programme was performed. At ten

or a little after the more venturesome spirits conducted friends along a mysterious subterraneous passage, emerged finally under the dome, where for the first time in its career the British Dental Association actually danced.

Friday, August 23rd.

Annual Meeting of the Benevolent Fund.

MR. S. LEE RYMER, J.P., President of the Association, in the chair.

The PRESIDENT said that this was the Annual Meeting of the Benevolent Fund, which had rendered extremely useful assistance to the less fortunate members of the profession and to those who came after them and had been deprived of the breadwinner of the family. He would call upon the hon. secretary to read the sixth annual report of the committee.

The SECRETARY read the following report :—

Your Committee beg to submit to the subscribers and contributors of the Benevolent Fund of the British Dental Association their sixth Annual Report, and the Treasurer's financial statement duly examined and certified by the auditors, extending from the foundation of the fund in 1883, to the end of the present financial year, June 30th, 1889.

The general business brought before your Committee during the last year has been of the usual description, several widows and children and dentists having been added to the list of those already receiving help. The new cases have been for the most part of an unusually distressing character, which eloquently illustrates the usefulness and *raison d'être* of the Benevolent Fund. The greatest care and precautions have been taken to fully investigate all applications that have been brought before your Committee, and all have been found to be worthy of assistance.

As usual your Committee have found in most cases that the best way of arresting family distress is by placing one or two of the children at a good school, where they are not only educated but provided for in nearly every way, and in addition to those who have now been at various schools for some years, your Committee have added several more to their number, and they derive much pleasure in stating that all these children are well and happy (no case of illness having occurred amongst them), and that they are also giving every satisfaction to their teachers.

It will be the duty of the Committee during this year to further advance the welfare of some of these children, by placing them in suitable positions, as far as lies in their power, to earn their own livelihood, and so help to permanently overcome the pinch of poverty at home.

Your Committee have already apprenticed a boy to a useful trade, at which he shows every sign of becoming a useful member of society, and earning a good and honest living. This case is especially interesting as the lad has received a most careful training at an excellent school, where he was taught the rudiments of the trade. This apprenticeship will continue for three years, so the whole of this boy's career will have been paid for by the Benevolent Fund, and will act as a model upon which your Committee will be able to mould the future of others in a similar position.

Your Committee again most earnestly appeal to the profession at large, and especially to those who are not contributors, to come so without delay, and so give them a greater opportunity of enlarging their field of usefulness, and to enable them to assist their substantially your poorer brethren to tide over difficulties which they are in no way to be blamed.

In accordance with Rule XX., this Annual Report is now forwarded for your approval and acceptance, and a list of subscribers has been prepared and is now open for your inspection prior to publication.

In conclusion, the best thanks of the Association are due to the auditors, Messrs. Ash, Forsyth and Gibbings, for their kindness in again auditing the accounts, and also to Mr. George Jawse, the Hon. Accountant, for his generosity in so ably preparing the balance sheet.

(Signed) S. LEE RYMER,

Chairman.

Mr. MORTON SMALE said he had great pleasure in moving the adoption of so satisfactory a report.

Mr. REDMAN seconded the motion.

The PRESIDENT, in putting the motion to the meeting, said he thought the report spoke eloquently for itself and showed the eminently practical nature of the work which was being carried on under the operation of the Fund.

The motion for the adoption of the report was carried unanimously.

The PRESIDENT said that in the regretted absence of the worthy treasurer (Mr. Alfred Woodhouse) he would ask Mr. Hutchinson to be good enough to read the financial statement.

Mr. HUTCHINSON then read the Treasurer's report :—

GENTLEMEN,—Being unable to personally attend the annual meeting of the British Dental Association, I again give you my financial report in writing.

On the whole I may congratulate you on our position, for we have not lost ground, though I regret we have not gained much, and the money you have entrusted to us has, I am sure, been expended carefully, and I think well ; this is to a very great extent due to the care taken by our Honorary Secretary, Mr. George Parkinson, in investigating each case and almost always having personal interviews with those seeking our aid.

You will find the exact statement of our position in the accompanying balance-sheet ; but I will go through the items, as I may thereby throw some light and interest into the matter.

Our receipts from all sources for the year ending June 30, 1889, were £399 1s. 1d. This compares apparently badly with those of the preceding year, which were £426 1s. 11d. ; but the increase was due to the special effort successfully made to raise the invested capital to £1,000, as a commemoration of the Jubilee year ; so considered, our receipts for the year must be considered satisfactory.

The above amount, £399 1s. 1d., was made up as follows : Donations, £129 2s. 7d. ; subscriptions, £243 5s. 6d. ; interest on capital, £26 13s. ; total, £399 1s. 1d. In addition to this we had in hand at the commencement of the financial year £253 17s. 4d., making a grand total for the year of £652 18s.

This amount was disbursed as follows : Benevolent allowance £251 15s. 4d., this is a few pounds less than the money so contributed last year ; printing and stationery cost us £8 13s. 7d. and postage and miscellaneous expenses £5 18s. ; and more invested £101 8s. The cash in bank is £246 os. 2d., almost the exact amount as when I made my last report. The cash in the hands of the hon. secretary for weekly payments was £39 3s. These disbursements give him very great trouble, but he discharges it most cheerfully.

I must draw special attention to the subscriptions for this year, as compared with last year, for they show that we need increased effort on the part of the friends of the Fund to keep up a

use its income. Each year some of our old supporters drop from one cause and another, so that it is quite necessary to have new ones to take their places.

I have, I am pleased to say, a fresh source of income, to which we owe the fact that we are not behind the receipts of last year. Mr. Booth-Pearsall suggested some months ago that a box should be placed on the table at each meeting of the various branches of the British Dental Association and of the Representative Board, in which members could place any sum they liked. The aggregate of these collections was the sum of £21 12s. 3d., a very good addition to our income, and we have not only the thanks of the donors but also Mr. Pearsall, who first suggested the box and carried it out.

I am, Gentlemen, yours faithfully,

A. J. WOODHOUSE.

MR. DENNANT, in moving the reception and adoption of the Treasurer's report, said that when they saw that so much good and solid work had been done by the committee during the year at the nominal cost of about £13, they must all feel they owed the Association a debt of gratitude to them for husbanding the resources of the Association so admirably.

MR. BAYFIELD seconded the motion.

MR. HUTCHINSON said he should like to make one or two remarks on the report. The Treasurer had referred to the difficulty in getting fresh subscriptions. He (Mr. Hutchinson) wished to take the opportunity of doing privately what he was doing publicly, and that was of suggesting to the Executive Committee of the British Dental Association whether they would allow the members of the Benevolent Fund to have printed on the slip which the Treasurer of the Association sent out every year a line, and then a blank for the figures to be filled in, in which should appear the words:—"Subscriptions to the Benevolent Fund." He thought that might assist them in getting some additional annual subscriptions. They really had no means of reaching each individual member of the Association except by some official plan of that kind. He hoped the Association would permit some such slip to be sent out. It might read somewhat in this way:—"Annual subscriptions for the year" . . . due such and such amount. Then another line:—"Subscriptions to the Benevolent Fund of the British Dental Association." Then a blank to be filled up. By that means the Treasurer would receive in many

cases the total sum for the two subscriptions, and then divide the amount according to the proper proportion between the Association and the Benevolent Fund. He trusted they would be able to induce the Treasurer (Mr. Canton) to take that as a matter of trouble on their behalf, and he hoped they would be able to put the scheme into some definite form before next year.

Mr. M. HENRY said he presumed, as was the case last year, that the need for help was greatly in excess of the supply.

Mr. CANTON said there would be no difficulty at all about printing a slip with the two subscriptions printed on it. He was very happy at a later period to talk the matter over with Mr. Hutchinson.

Mr. G. HENRY asked whether collecting boxes were in connection with the fund.

Mr. HUTCHINSON thought that collecting boxes had been used at all the meetings except the present one.

Mr. G. HENRY said he referred to private boxes. Collecting boxes occurred in practice where no fee was charged to the patient, but the patient himself would rather pay something. They might call the patient's attention to the Benevolent Fund box.

The SECRETARY (Mr. George W. Parkinson) said the boxes referred to by the last speaker could only be used for collecting hospital funds and not for the Benevolent Fund, which was essentially a charitable institution.

Mr. J. SMITH TURNER said that they could appeal with confidence to the public in support of their hospitals, but he did not see what right they had to go to the public and ask for help from their indigent brethren. He thought it was a matter that belonged solely to themselves.

Mr. DENNANT said that if no special effort had been made to supply boxes at the annual meeting it was because they had not. At the annual meetings of the Association had been rather usual in that direction. Special efforts had been made, and the members were not a little tired of it. They thought that a round collection at the dinner would make up for other deficiencies, and would certainly save a great deal of trouble in making any special effort.

Mr. HUTCHINSON said he was sorry the Treasurer had not given his statement in detail as he had done last year, and perhaps he was afraid he could not give such details. He thought that at the dinner in the evening it would be possible to ask

more length to some of the cases. They were not allowed by the bye-laws to mention names, but Mr. Parkinson could tell the members present the details of the sort of cases they had on hand. He assured them that they had to husband their resources very cautiously, and they were unable to make anything like the grants they should like to do. Mr. Bowman Macleod, and Mr. Waite, of Liverpool, had both acted as almoners on behalf of the fund recently, and they could both say from their personal experience how grateful the recipients had been and how absolutely necessary were further subscriptions to the fund.

The PRESIDENT, after a few remarks, put the motion for the reception and adoption of the Treasurer's report.

The motion was carried unanimously.

The PRESIDENT said that the next business was the election of two gentlemen on the committee in the place of the retiring members, Messrs. J. Browne-Mason and Fenn Cole. The list was before them to elect from, and the names of any other subscribers that might occur to gentlemen present could be put down. It was, however, very desirable to elect gentlemen who could attend the meetings. There was a difficulty sometimes in forming a quorum, which consisted only of three, and as a rule it was the three same gentlemen who met from time to time. It would be most advantageous to elect gentlemen who could attend a little more frequently, because the present condition of things was placing a great strain upon those three gentlemen. It was hardly to be expected that gentlemen living a hundred miles away could attend at any time, therefore the question was whether it would not be desirable to elect two gentlemen in London who were on the scene of action, and who in case of great need could be summoned together at a moment's notice.

Mr. DENNANT said that having served for some years on the Committee he knew something of its working, and had a very strong feeling in the matter. This should be unlike the composition of the Representative Board, which should be distinctly representative of the Association, but in an administrative fund like this, where the members of the Committee wanted to be constantly in attendance and to have an intimate and special knowledge of all the cases that came before them, cropping up as they did from time to time, it would be of considerable advantage to the Fund if they could secure gentlemen on the Committee who would be constant in their attendance. In his opinion it would be distinctly

better for the Fund if two London men were selected. He did not think that any gentleman, whose name was on the list, residing at a long distance from town, would object to be set aside in order to secure the better management of the Fund. He did not think it necessary to propose any names other than those on the list submitted to the meeting.

Mr. MACLEOD said he thought it was quite possible to find a provincial man who did not live a great distance from London, who had the object of the Fund very much at heart, and took a great interest in these matters to the extent that he would put himself out to come to London to attend the committee meetings. There was the name of one provincial gentleman on the list, who, being well convinced, took a great deal of interest in the matter, who lived frequently in London, and would be likely to attend the meetings of the Committee. They must not, therefore, ignore provincial men altogether. He referred to Mr. Brunton, of Leeds, who, with his wife, took a great deal of interest in the work.

The PRESIDENT said that if Mr. Brunton would be able to attend, he would be a very valuable addition, and he (the President) thought there would be no doubt as to his unanimous election.

Mr. HUTCHINSON said that, without prejudicing the case in any way, he would point out that in the rules, as proposed to be adopted at that meeting, provision was made for the Hon. Secretaries of the Branches to become *ex-officio* members of the Committee. In addition to that there was a proposed alteration in Bye-laws to the effect that the Committee of Management shall be empowered to write to the President and Hon. Secretary of each Branch to act as a Local Committee. Vigorous provision was thereby made for the working of the Benevolent Fund all over the kingdom. He pointed that out to show that they had acted in the best manner which Mr. Macleod had so well advocated.

The ballot was then taken for the election of two members to the Committee, and Mr. Ashley Gibbings and Mr. Howard Mery were elected to fill the vacancies.

Mr. REDMAN said that amongst the letters he had received in the morning was one from a gentleman residing in Brighton, Mr. Tillston, thanking them for their invitation on the previous evening and regretting his inability to be present, but enclosing one guinea towards the funds of the Association. He (Mr. Redman) did not think the gift could be put to a better use than to be handed over to the Benevolent Fund.

Mr. HUTCHINSON said he had been requested by the President to read the proposed alterations in the Rules. The first alteration was in Rule VI., in which the words, "unless otherwise directed by the donors" were proposed to be put in a parenthesis. He would propose that that alteration be made.

The motion was adopted.

Mr. HUTCHINSON proposed that Rule X. should read as follows (the alterations are printed in italics):—

"The affairs of the Fund shall be conducted by a committee of management consisting of *not less than* ten members and composed as follows: the President for the time being of the Representative Board of the British Dental Association (if he be eligible as a contributor to the Fund), the three Trustees, *the Treasurer and the Hon. Secretary of the Fund, and Hon. Secretaries of Branches, the latter being ex-officio members*, and six contributors to the Fund of not less than £1 1s. per annum, and donors of £10 10s. and upwards in one payment, or £5 5s. in two consecutive years, being also members of the British Dental Association, two of the latter of whom shall be members of the Representative Board of the Association. These last-mentioned members may serve for three years from the date of inauguration of the Fund, at the expiration of which period one-third of the members shall retire according to seniority of election. *After the third year one member shall retire annually, according to seniority of election, and shall be eligible for re-election.* The Committee shall elect a Vice-Chairman from amongst themselves, also a Treasurer and Hon. Secretary, subject to the confirmation of the next general meeting of the subscribers of the Fund."

The motion was agreed to.

On the motion of Mr. HUTCHINSON, seconded by Mr. REDMAN, Rule XI. was altered as follows:—

"The Committee shall prepare and cause to be issued to the contributors to the Fund one week at least before each Annual General Meeting, a list of persons eligible to serve on the Committee for the ensuing year, if any vacancies exist, stating the name of the member of the Committee who retires. The list shall contain the names of two members of the Representative Board, six contributors to the Fund, and six other contributors to the Fund, being members of the British Dental Association."

Mr. HUTCHINSON moved and Mr. REDMAN seconded that Rule XII. be altered to read as follows:—"At the annual election

every voter may erase any name or names from the list, and substitute the name or names of any other person or persons eligible to serve on the committee, but the number of names on the list after such erasure or substitution must not exceed the number of members of the committee, including at least two members of the Representative Assembly. Those lists which do not accord with these directions shall be rejected by the scrutineers."

Mr. BRUNTON hoped in future when an important matter as the alterations of rules was to be discussed that the proposed alterations would be placed in the hands of the members prior to their coming to the meeting. On the present occasion he had hardly had the opportunity of grasping the meaning of the alterations.

Mr. WEST moved that the alterations of the Rules be referred in bulk back to the committee to be reconsidered on a future occasion.

Mr. BRUNTON seconded the motion.

The PRESIDENT said that Mr. West could only move that the remaining alterations in the rules be referred back, as the alterations had been already adopted. If such a course was pursued the whole matter would be postponed for another year. The proposed alterations were merely formal.

Mr. WEST said he thought there was a very radical alteration in Rule X. On one column it said that the retiring person was ineligible for re-election, but the alteration was that he was eligible. That, he thought, was a very substantial alteration.

Mr. DENNANT said that that question was submitted to the meeting last year with great force and emphasis. As far as he could throw any emphasis into it he had been very strong on that point. From the very foundation of the Fund he had felt that it was extremely important that the men who took part in the administrative work should be eligible for re-election on the basis of the nature of the work. He regretted that the matter had not been brought forward earlier so that it could have been considered at the meeting last year. It was then proposed that the question should be postponed for a year. The time had expired and the rule had been altered accordingly.

Mr. J. S. TURNER said that the Journal was the best medium to be made use of for the purpose of calling attention to proposed alterations and other cognate matters.

The HON. SECRETARY said that a notice of the proposed alterations had appeared in the last Journal.

Mr. HUTCHINSON's proposal that the new rules be accepted *en bloc* was then put and carried.

On the motion of Mr. HUTCHINSON, seconded by Mr. MORTON MALE, Mr. Dennant was elected as auditor for the ensuing year, was also Mr. West, proposed by the PRESIDENT, and seconded Mr. REDMAN.

The PRESIDENT said the next business they had to perform was a very pleasant one; it was to pass a vote of thanks to their valued and esteemed officers, the Treasurer and Hon. Secretary. It was not necessary for him to say anything in their praise for the manner in which they had fulfilled the duties of their offices, as it was so well known to all the members. He begged to propose, "That the cordial thanks of this Benevolent Fund be recorded to the Hon. Treasurer and Hon. Secretary for their valuable services during the past year."

Mr. DENNANT seconded the motion, which was carried by acclamation.

The HON. SECRETARY (Mr. George W. Parkinson) begged to thank the meeting for the kind way the vote of thanks had been proposed and accepted, and he wished to inform those present of the work done for the Benevolent Fund by his colleague, Mr. Woodhouse, and himself, was a labour of love, as by any inconvenience they were put to they felt they were doing something for the benefit of the profession at large, and as long as they were entrusted with the affairs of the Fund, they would try to do in the future as they had endeavoured to do in the past "their very best" for the benefit of their poorer brethren and for the prosperity of the profession, which they all had so much at heart.

Mr. HUTCHINSON proposed a vote of thanks to the President of the Association for so kindly taking the chair on the present occasion.

Mr. G. HENRY seconded the motion, which the President acknowledged and the meeting terminated.

RESUMED DISCUSSION ON ANÆSTHETICS.

THE PRESIDENT IN THE CHAIR.

Mr. SMITH TURNER, after recalling to the meeting the general lines of the papers of the previous day, expressed his surprise that Mr. Macleod should have relied upon ether as a restorative in cases of collapse under chloroform. He was pleased to hear both from Dr. Buxton and Dr. Hewitt that so far as any conditions of the heart were concerned, speaking generally, nitrous oxide gas was a safe agent—that if there were danger at all it was when the functional duties of the heart were interfered with rather than when any fundamental lesion was present. He spoke strongly in favour of paying the utmost attention to the physical comfort of the patient. He thought it would be a good thing if gentlemen who were in the habit of giving anæsthetics and gas would, as Dr. Macadam said he had done so frequently, experiment on themselves.

Mr. COFFIN said the chief interest of the discussion would be thought, centre in Dr. Hewitt's paper, seeing that the administration of one-eighth of oxygen would open up almost a new era in their experience of gas. He understood Dr. Hewitt to say that in the administration of nitrous oxide and oxygen in those proportions all asphyxial symptoms were absent and that the main guide as to the completeness of the administration was the amount of gas which was given. He should like to see how, when gas was given as described, the operator could be sure that the amount he had in the holder had really been exhibited to the patient, or how much had escaped from the extra pressure. It was, he thought, somewhat misleading to say that the administration took place under pressure; certainly, it was not strictly so in the sense in which Paul Bert and other physiologists referred to it. He thought the expression "intra-thoracic pressure" was not quite scientific. It would seem to be impossible for any additional positive pressure really to exist in the lungs under normal atmospheric conditions. The term seemed to be used somewhat loosely and roughly in this respect. He should be very glad if it could be cleared up. He was

with great care the exhibition kindly given them, and having timed it accurately he found that from the time the face-piece was removed from the patient absolutely no signs of consciousness were given for fifty-five seconds. At the same time the appearance was so perfectly normal from the beginning that it was almost impossible to realise that consciousness was not there from the moment the face-piece was removed, and that if an operation had been performed it might have been otherwise. He could, however, bear testimony to the fact that for fifty-five seconds there were none of the ordinary symptoms of returning consciousness.

Mr. WEST believed that dental surgeons were justified in using chloroform when there was necessity. He had experienced unsatisfactory results with ether, but chloroform had in his private practice been eminently satisfactory. The apparatus adopted was simply a convex wire with flannel over it. Of course by that means a large admixture of air was allowed and a perfectly horizontal position. He spoke highly of the value of nitrite of amyl as a restorative in cases of collapse under chloroform.

Mr. SPOKES said that chloroform was a very excellent and simple anæsthetic for emergencies in a country district; it was easily carried about, a large quantity was not required, and it could be more easily given than ether. In cases where there was no emergency, since they had at their command a safer and a not more unpleasant anæsthetic in the shape of nitrous-oxide gas, he thought it unjustifiable to go out of their way to use chloroform. He would not justify the use of chloroform in dental cases, except in rare instances where it was necessary to get complete relaxation of the muscular tissues—for instance in taking out decayed wisdom teeth. Its uses might perhaps be justifiable for a prolonged operation of that kind, but apart from such cases its use should be restricted to major operations, and then he preferred ether. Ether was a most valuable agent in connection with nitrous-oxide, but for the ordinary run of dental cases they should confine themselves entirely to nitrous oxide with occasionally a little addition of ether. He was in the habit of giving a patient two or three inhalations of nitrous oxide, if necessary, on the same day, with, say, five-minute intervals for rest.

Mr. S. J. HUTCHINSON said that what had to be considered with regard to anæsthetics might be placed under three heads. First, that they should produce complete anæsthesia; secondly, that they should give the patient as little discomfort as possible during the administration and after the operation; and thirdly, that the anæsthetic which was the safest should be used in preference. There could be no doubt that ether did cause a certain amount of sickness, and this was a disagreeable symptom which was very seldom caused by nitrous oxide gas itself. As to the administration of chloroform, other speakers laid stress on the fact that the patient should be in a horizontal position, but they had not also mentioned that everything should be loose about them. This was a most essential condition. Women should not wear corsets, but everything about them should be absolutely loose. One further condition which he commended to his fellow practitioners as an invariable rule was that in these cases they should put themselves out of the way and visit their patients at their own homes. After the operation they could remain on their own beds, and if they were some time recovering from the operation they would do so under the best possible circumstances. If chloroform were given, no doubt Mr. Clover's apparatus, which only allowed a 4 per cent. administration of chloroform, was certainly the safest way of giving it. Dr. Buxton had pointed out in his book on this subject that it was the greatest possible mistake to give an anæsthetic of any description on an absolutely empty stomach, *i.e.*, in the early morning before breakfast. Many operators preferred this time for the administration of chloroform, but his own success had been greatest when the anæsthetic had been given at about 1 o'clock or 12.30, just before lunch time, when some three or four hours had elapsed after breakfast. He was quite sure that the disrepute that sometimes had fallen upon nitrous oxide of making patients sick had been entirely due to the fact that they swallowed blood. They did not like to empty their mouths while riding home; the consequence was they swallowed the blood, and when they got home they were sick. The practical point had occurred to him that if they could stop the bleeding before the patient went home then the nitrous oxide gas would not be blamed at all. With regard to the use of chloroform

must distinctly support Mr. Spokes in saying that it was only desirable to use it in cases where the mouth was being forcibly gagged open for the extraction of difficult wisdom teeth or for some operation which would extend beyond the time requisite for nitrous oxide. He did not however believe that chloroform or any anæsthetic ought to be used for the sake of extracting fifteen or sixteen teeth at a time, because he was quite sure that the number of ordinary teeth that could be taken out under nitrous oxide was quite as much as any patient was able to bear with perfect comfort.

Dr. STACK said that in his opinion the dentist ought to use all the anæsthetics, whether ether, chloroform or nitrous oxide. In his own view, and that of a very large number of dentists, nitrous oxide was not a certain agent on which they could rely for taking out even one difficult tooth. In the case of a badly broken crown or anything of that sort where they had to go after the roots one inhalation of nitrous oxide was in many cases not sufficient to enable them to conclude the operation thoroughly and satisfactorily. He regarded the speed of operation under nitrous oxide as in itself a danger as rendering possible such accidents as the dropping of a tooth into the larynx. He thought that deleterious after-effects might be traced to the use of nitrous oxide, especially in the case of children. He also thought the brief duration of the anæsthesia a grave objection to the universal use of nitrous oxide, and deprecated a second administration of the drug. It was useful for short operations only. With regard to ether, it was of all the anæsthetics the most likely to produce sickness, whether they sponged out the saliva or anything else. One point in favour of ether was that it was a stimulant to the heart, and it was a good anæsthetic for administering in the sitting up or upright position. The deaths recorded from ether had proceeded in the main from injudicious administration, from the anæsthetist not knowing what he was doing, and choking the patient by not giving sufficient atmospheric air. Taking all classes of all ages, from sixteen or seventeen up to sixty or thereabouts, ether would seem to be by far a safer anæsthetic to give than chloroform as far as the mortality had gone. Chloroform was also a most valuable agent, and though it had been given and pushed in a great number of cases in the Rotunda Lying-in Hospital in

Dublin they had never had a death from it. It was, therefore, absurd to talk of its use as being, in that institution really fraught with any great peril. Chloroform could be used with safety in the case of young children, many of whom viewed with terror the putting on of the face-piece of the nitrous oxide, and on whose blood the latter agent was by some supposed to act injuriously. He was an advocate for the use of all these agents; every one had its use. He should expunge from the pharmacopœia, as far as prolonged operations were concerned, nitrous oxide, and he thought, contrasting ether and chloroform, they both had their advantages—ether in the case of an adult, and chloroform in the case of a child where the heart was good and strong. As to sickness, there was no doubt far more under ether than chloroform, and it was therefore simply absurd to put aside this valuable agent because there was a chance that in 1 in 3,000 cases it might do some harm.

Dr. BONWILL congratulated the Association on the discussion. If he were to side with any one it would be with Dr. Hewitt in his use of one-eighth of oxygen to seven-eighths of nitrous oxide. His own experiments had taken a line which was, he thought, unique, viz., in regard to rapid respiration as a means of annihilating pain. It had been ascertained by experiment that rapid respiration for one moment previous to the administration of nitrous oxide, chloroform, or ether would reduce the quantity required and would lessen the chance of asphyxia. It occurred to him some years ago, that by simply taking ordinary air and increasing the number of respirations from twenty to one hundred, that if he could prevent the heart from corresponding with the number of respirations then he could produce what he would call analgesia or the destruction of pain to such an extent that he could extract a tooth. In a few days he had a chance of trying the operation and it was a perfect success. It took him a long time to believe in it, but since that time he had never extracted a tooth in any other way than simply by rapid respiration, and he had extracted from one to seven at a sitting. His idea was that inasmuch as the heart itself did not increase in the number of pulsations, as he had proved by the sphygmograph, an excess of carbonic acid gas passed into the circulation and, being kept back by the heart owing to the number of pulsations not being increased, pro-

duced this effect upon the nerve centres. He quoted several cases in which insensibility to pain had been produced, although the apparatus had been so defective that no anæsthetic had really been administered, and explained their occurrence by the rapid respiration theory. In conclusion he asked that a fair trial might be given to the method of rapid inhalation, and then he could from his own experience assure them of its success.

Mr. DENNANT expressed his concurrence in the views of Mr. Spokes and Mr. Hutchinson. He thought, however, after the admirable disquisition they had had from Dr. Hewitt, on the question of a percentage of oxygen added to nitrous oxide they were bound to investigate that subject very closely. It pointed out to them precisely what they very much wanted in connection with nitrous oxide. One weak point in the administration of nitrous oxide was that it was generally given cold, straight from the bottle, which had a disagreeable effect, to say the least, upon the patient. He had always given it from a gasometer, and urged all who could possibly do it to place the gas in the gasometer sufficiently long time for it to acquire the temperature of the surrounding atmosphere.

Dr. HEWITT said he was extremely obliged to the members for the very kind way in which they had received what was really, so far as he could see, merely experimental work. He had laid stress upon the fact that he wished it to be considered experimental up to the present point, for, as they all knew, there were some cases of nitrous oxide in which they could not absolutely depend upon producing a perfectly satisfactory form of anæsthesia, and, so far as he had gone, he believed there were cases in which this mixture would not produce thoroughly satisfactory anæsthesia. He believed, however, that they had in it a means of dealing with nearly every case, and it was a matter of secondary importance to determine the best method to be employed in its use. He wished to say as much as he could concerning the anæsthesia which, undoubtedly, resulted from the inhalation of oxygen and nitrous oxide. He was told that it had been said that patients who had been anæsthetised had said that they were really conscious during the whole of the process. He wished that gentlemen could express those views in public, because he could prove,

he thought incontestably, that the patients who inhale mixture were, in the vast majority of cases—putting exceptional cases on one side—anæsthetised—he would per cent. He had on one occasion taken the mixture in the presence of two gentlemen, one of whom was counting the other pricked him in the hand with a needle, and stated in his paper, he was unaware of the fact of a being pricked into his hand and felt absolutely no pain. The want of pain was analgesia, but the want of consciousness was anæsthesia, and he maintained that with this mixture the desired states were attained. With regard to the signs upon which one should depend when removing the face-piece they were somewhat difficult to determine. In the vast majority of cases there was flaccidity of the extremities. In the early stage there was spasm of the upper eyelid in attempting to raise it, but that passed off, and eventually the eye presented an unconscious appearance. The pupil was not as widely dilated as under nitrous oxide, but it was slightly so, and the eyes were occasionally perfectly fixed in a certain direction. At other times the eyeballs presented slight oscillatory movements. In other instances, instead of perfect flaccidity, there was slight rigidity, and even on the application of the face-piece there might be a slight reflex movement of the patient, sufficient to produce a very slight opisthotonic condition, so slight as not to be in any way inconvenient. The persistence of the corneal reflex action was a most important point. The corneal reflex was usually present, which pointed to the fact that the anæsthesia which was produced was not of a very profound nature. The fact however that the corneal reflex persisted was not a reliable sign of a mental one; he did not see why it should not persist, and the patient be absolutely unconscious. He believed that the patients mostly were absolutely unconscious of everything that was going on, as well as unconscious of the perception of pain.

Mr. Coffin had said that his difficulty was to know when to remove the face-piece—that it seemed difficult to ascertain whether the patient was really anæsthetised. That very difficulty proved the valuable character of this anæsthesia. The patient appeared to be calmly asleep, and those who had been accustomed to see the ordinary effects of nitrous oxide could hardly believe that he was in an anæsthetic state. He regarded that as a very important point, and on

which considerable stress should be laid. He took it to mean that the anæsthesia was of a very perfect type. For a long time people had been trying to get an anæsthesia which was not associated with the peculiar symptoms of nitrous oxide. He did not wish to refer to nitrous oxide anæsthesia as being injurious—he did not think it was. He did not think it was dangerous; with proper precautions one might push nitrous oxide to a very considerable extent; but what he said was that the symptoms at the end of the administration were certainly not pleasant to the patient—certainly not pleasant for the patient's friends to witness; and if by any chance it was pushed to too great an extent, those symptoms were likely to culminate in some considerable difficulty of respiration. Those facts must be looked straight in the face. He did not agree with those people who were in the habit of saying "Oh yes, nitrous oxide is a very simple thing." He maintained that, unless it was given with proper caution, it was an anæsthetic which might produce embarrassment to respiration. It was not to the interest of chloroformists to emphasise facts of this description, but at the same time he maintained that unless nitrous oxide was given carefully, it was likely to set up difficulties of respiration, and he frequently heard from those who were in the habit of giving gas that they had met with difficulties. They did not hear of this so much in public as in private, but there were the difficulties, and it was those difficulties which he was particularly anxious to face and to usually determine the nature of. That brought him to another point, to which Mr. Coffin referred, viz., the administration of nitrous oxide as a preliminary to ether. Mr. Coffin, and no doubt a great many other people, believed that giving nitrous oxide as a preliminary to ether was an extremely simple business. He believed that in a very high percentage of cases, it was a very easy matter to give nitrous oxide as a preliminary to ether, but cases occurred in which difficulties arose, and when he referred to those difficulties it was with the object of obtaining information from members and others concerning the nature of those difficulties. They occasionally arose in practice, and he wished to know their explanation, so that, should they occur, they might understand them and be able to combat them in

the most satisfactory manner. The chief difficulty in passing from nitrous oxide to deep etherisation was in the regulation of the air, which must be admitted, and he thought those who had watched a considerable number of administrations would agree that that was the difficulty. There was nothing to be done to the patient to support his respiration unless they gave him fresh air or oxygen, and it was on the regulation of the quantity of air admitted between nitrous oxide and ether that the success of the administration depended.

With regard to the perhaps injudicious expression "increased thoracic pressure," he used it because he could not think of any other better. He was quite willing to adopt any expression so long as it conveyed his meaning. What he meant was that the gasometer was weighted each inspiration which the patient took was one in which nitrous oxide was slightly forced into the chest. He thought it was impossible to force nitrous oxide or any gas into the thorax without increasing the pressure. He did not dwell upon the physiological effect which this pressure produced in the blood, indeed he did not know what he termed intra-thoracic pressure produced very little difference; he only stated as a practical fact that this pressure was used in giving nitrous oxide with oxygen and would result. When making the experiments he thought he should be able, by employing two bags, to secure a perfect apparatus. He had one bag to contain ten and a half gallons of nitrous oxide and a small bag connected with it to contain one and a half gallons of oxygen, the two bags being connected by a large stop cock. The diameters were carefully varied out so that they might contain the volumes of gases in the right proportion. He turned the stop cock and mixed the gases. He found that if he could get an assistant to compress the bags and keep up the increased pressure the cases were satisfactory, but immediately he gave the gases without employing the pressure the cases were unsatisfactory—in other words, that pressure was absolutely necessary in giving the mixture. That was a thing which had only been brought to his knowledge in the last two or three months, and he wondered now why it was not seen before, for he believed that the usual causes of failure on the part of Mr. Cooper and others employing nitrous oxide with oxygen had lain in the fact that the two gases had not been given under pressure.

In regard to rapid respiration, he was extremely interested to hear what Dr. Bonwill had brought before them. They should thank him very much indeed for his remarks, for without the co-operation and assistance of others it was extremely difficult to make any progress. He hoped that members who had the opportunity would not only put into practice and test the efficacy of his plan of inducing analgesia but would also try the effect of nitrous oxide and oxygen. These things ought to be worked out by a great many people, and that was the way to arrive at good conclusions. A man might work long in his own particular groove and arrive at his own particular conclusions without the knowledge of other people criticising him, and he was very likely to fall into error. It would therefore be of the greatest possible use and they would get on much more rapidly if members of the Association and others would actually put into practice or experimentally practise at all events some of the facts which had been brought before them. He confessed he did not know the *rationale* of Dr. Bonwill's method. So far as he could see he should be inclined to regard the analgesic effect as due to some disturbance of the cerebral circulation. The very fact of his finding that it was necessary for the heart not to increase its pulsation to any considerable extent proved that it was an alteration in the quantity of the blood, or some alteration in the blood current through the brain. They knew that if they ran and took very deep respirations they did not get, so far as he knew, into an analgesic condition, and there he imagined the heart's action was accelerated in a sort of proportion to the respiratory movements. From what he understood Dr. Bonwill to say it was necessary that the respiratory movements should be increased, but that the heart's action should not be much increased; therefore, he imagined, the sudden expansion of the chest must in some way affect the cerebral circulation, possibly by accelerating the return of blood from the brain. He threw this out as a hint because he believed that deep respiratory movements would have the effect of drawing blood away from the brain rather rapidly, and it was possible that that might be an explanation of the phenomena which had been observed.

He wished to say a few words concerning chloroform. Personally he had had some experience with it, and he

never employed it if he could possibly avoid doing so. He used ether in preference for general operative surgery. He believed chloroform was comparatively safe in the hands of those who were skilled in its administration, but what he wished to emphasise was this; they were not discussing anæsthetics to be employed by skilled people, but anæsthetics which might be employed by those who had not had much experience. To put an anæsthetic like chloroform into the hands of any one who had not had much experience in giving anæsthetics was hazardous in the extreme. No one had referred to the "A. C. E." mixture, consisting of one of alcohol, two of chloroform, and three of ether, which was believed, one of the most valuable anæsthetics. In cases in which chloroform should be employed in preference to ether it was nearly always possible to give the "A. C. E." mixture, and accidents would far less frequently occur, if it was given with all the precautions with which chloroform was employed.

Mr. BOWMAN MACLEOD said he had listened with very great pleasure to the discussion, and was more than satisfied with the acceptance which had been given to chloroform. He was glad to hear that with the exception of one speaker all admitted that chloroform had a place, and a most valuable one, in anæsthesia; and no doubt day by day its place, even in their estimation, would increase, because, as he had said, as the administration of it was gradually leaving the hands of the uninitiated and careless, so the accidents which accompanied or followed its use became less and less. The one great reason why so many accidents had been attributed to chloroform was from the fact that it was so simply administered. It was easily given, therefore it was thought anybody could give it. That fact had, however, been found out and acknowledged, and it was by day drifting into the hands of those who were trained to administer anæsthetics, and so would gradually reach its proper place. Although advocating chloroform he tried at the same time to be as little of a partisan as possible. He simply claimed that when they really wanted the best anæsthetic they could have, that was to say, one that would produce the most profound state of unconsciousness and freedom from pain, chloroform was the one that fulfilled those conditions, and that had been admitted generally in the discussion.

Smith Turner asked how it was that speaking so favourably

of chloroform, he should suggest a dash of ether if the heart became depressed. The reason was simply because ether in its first exhibition was a heart stimulant. In a prolonged case of etherisation it became a depressant. It came back very much to the same classification as chloroform, and the action of the heart became depressed, although at a much later stage than in the case of chloroform. By giving a dash of ether if they found a heart becoming depressed they introduced a stimulant which restored the heart to its normal action to a very great extent. He was asked by Mr. Bailey whether he never used anything but chloroform. He was not himself an anæsthetist, but, like themselves, a dentist, who operated in chloroform cases while an anæsthetist was giving the anæsthetic. In Scotland of course they did use more chloroform than ether, but with regard to his own practice, and he might say the same of all other dental practices in Scotland, there was certainly much more nitrous oxide given than chloroform, for the simple reason that there were more of the minor operations in dentistry performed than of the major, and in the case of minor operations nitrous oxide was a very useful anæsthetic. He generally administered nitrous oxide at his own hand, and his experience was that he had had more cause for anxiety in administering nitrous oxide than he had ever had when an anæsthetist administered chloroform for him. He never had anything very serious, but many anxious moments, and occasionally rather annoying accompaniments. Nitrous oxide was not a profound anæsthetic at any time, and he was glad to hear Dr. Hewitt admit that even with oxygen it did not produce a profound anæsthesia; he thought that the admixture of oxygen, although making it a better, would render it a less safe anæsthetic. The reason why it was so safe when not mixed with oxygen was that asphyxia was produced at a very early stage, and this caused the operator to desist giving it. The patient not coming in a profound state of anæsthesia recovered consciousness quickly, and therefore respiratory action, before the termination of life, could take place from asphyxiation.

The latest case they had seen of the sustainment of life for a long period without a fresh supply of air to the lungs was the case of Miss Johnson, who remained submerged in the water at the end of Blackpool pier for three minutes and ten seconds. Prior to that the longest time on record

was two minutes and fifty seconds; two minutes might be taken as the average period for which life could be sustained without ordinary respiration. In giving nitrous oxide there was had restoration of respiratory action in a very much shorter period, because they could not sustain the anæsthetic condition longer than about sixty seconds at the most. The danger therefore, viz., asphyxiation, was curiously enough a very safety in the hands of the ordinary practitioner. In regard to nitrous oxide never producing sickness, Mr. Hutchinson stated it so emphatically that he must not overdo it. He (Mr. Macleod) retorted as emphatically by saying it did sometimes produce sickness. He had had instances of sickness being induced by the exhibition of nitrous oxide before a drop of blood was shed, so that the blood could not be blamed for having caused sickness in those cases. Hutchinson also said that it was very much better to give nitrous oxide three or four times if a number of teeth were to be extracted, that was to say, no one should ever take out more than three or four teeth at a time, and that it was almost murder if not worse to take out fifteen or sixteen teeth. He differed on that point, thinking that if they extracted three normal teeth they could not possibly, especially if they had unconsciousness, produce a worse constitutional shock by taking out a greater number, and he believed that they could out any anæsthetic at all after they had exceeded three or four. If they proceeded to take out more the amount of shock produced by taking out double the number would not be more than the shock. There was a period when the height of the shock was reached and they could not very well get beyond that; then they rose by a bound to another and higher point again, so that they might take it as it were from three to six, six to nine and nine to twelve. The experience of those who had undergone very great shock from the attack of wild animals was, that after the first leap upon their body they were perfectly indifferent to what the ultimate result might be. The shock reached its highest point at the first onslaught, and was not increased by subsequent torture. Then as to the rapid inhalation analgesia of their friend, Dr. Bonwill, it was perhaps all right as a theory; good enough for an experiment in selected cases, but no use in general practice. So far as we can understand it, it seems to be a combination of asphyxiation, exhaustion and faith.

The rapid inspirations are not deep inspirations as Dr. Hewitt seemed to infer; rapid *and deep* are incompatible; they are rapid and *shallow*. The result is that the tidal capacity of the lungs is reduced, and the residual capacity increased. For every expiration given, the inspiration made afterwards introduces a smaller quantity of fresh atmospheric air, the supply of oxygen being thus reduced and the oxygen in the residual air being soon exhausted, partial asphyxia supervenes; prostration or exhaustion follows the violent muscular action demanded by rapid inspiration, and dulls or weakens the capacity of the nerves to convey sensation, and faith glosses the confused and dulled sensation into a painless operation.

The PRESIDENT remarked that in the programme it was said it was hoped that an interesting and valuable discussion would follow the reading of the paper. That hope had been abundantly realised. They were very much obliged both to the reader of the paper and those who had taken part in the discussion for the valuable information accorded, which no doubt would be duly acknowledged in proper form by-and-by. It was particularly gratifying to know that these valuable papers and this useful discussion would not be lost, but would, in the pages of their excellent Journal, go far beyond the present assembly, numerous as he was pleased to see it was.

The meeting then adjourned to afternoon tea, which was served in the Pavilion.

THE DINNER.

The Annual Dinner of the Association was held in the evening in the Banqueting Room of the Royal Pavilion, Mr. J. DENNANT, D.S.Eng., of Brighton, in the chair.

Grace was said by the Vicar of Brighton.

The CHAIRMAN before proceeding to the toast list said he desired to express his deep regret at the sad event which had cast a shadow over the meetings during the present year, and which had prevented their having the pleasure of the genial presence of their President, Mr. S. Lee Rymer, to occupy the chair. He thanked his professional brethren and his friends at Brighton for the compliment they had paid him in requesting him to fulfil the position that he then occupied. (Cheers.) His position was a very difficult one to fill. He knew the value of Alderman Rymer, his popularity, and the long years of service which he had rendered to his profession, and he therefore felt a

considerable amount of confidence in taking the position that
filled. He knew, however, that he was in the hands of those
of whom were of long standing, and with whom he had been
associated in struggles for medical reform long before the
the Association. He would in the best he could in the
assigned to him, and throw himself in the management of his

The usual day's work was then proposed from the Chair and
dismissed.

The Rev. Professor HANKE, D.D. of England, presided
over the evening. "The British Dental Association is
honoured to have you here." He was sure that the hour
which would commend itself to all present. It was a matter of
gratification to all who had been in their hands to observe the
work the Association was making. It was ten years since
Dental Act was passed: the Association now numbered eight
members. It was ten years since the Legislature recognised
dentists as a learned one and passed the Dental Act, and the
which they had since made were beyond any reasonable expect
Mr. Keble—there—was their local organising Secretary,
and to him he believed a great share of the success of
their meetings must be ascribed. He coupled with the
names of Mr. J. Smith Turner and Mr. W. B. Egan. (Cheers.)

Mr. J. SMITH TURNER, who on rising was received with loud
acclamation, said he thanked them most sincerely for the cordial
which they had drunk the health of the Association. As to the
of the Association, none of it was obvious enough. It had
its various duties to conduct the proceedings, reports of which
appeared in the newspapers. That was a disagreeable duty which
performed not only in defence of the profession, but in the interest
the public. Then the Association conducted a journal, which was
a highly scientific character, and which occupied a very good position
in professional literature. (Cheers.) It also had a Benevolent
under its auspices, and last of all he might mention those
annual gatherings, the consummation of one of which they were
enjoying. But it also performed work which was not quite so obvious
and which could not always be brought before either the public or
members. It took a lively interest in the general welfare of the
profession in many directions, and it had a restraining influence which
could only be appreciated by those who exercised it. It exercised
restraining influence on those who sought only to make money of
their profession. There were three or four gentlemen present
occupied a very high position in the profession in Dublin, and
of them were members of the Council of the Royal College of
Surgeons in Ireland. Since our very successful meeting in Dublin
last year, there had been three or four meetings in Ireland, and
every part of that country had done its best to further the success

those meetings. They had the ear of those who regulated to some extent the curriculum through which their students must pass before they became qualified dentists. Their honorary secretary thought it would be well if dental students were obliged to study *materia medica*. They also endeavoured to educate the public who were not aware of the suffering to which they subjected themselves in listening to the charms of those people who called themselves dentists, and who pretended that they could do a great many things which a properly-qualified practitioner could not do, and which they themselves could not do. They also wanted to educate the medical profession, who were somewhat slow in recognising their efforts, and to obtain their assistance in raising the whole tone of the profession. The better dentists were educated the better it would be for the public. In conclusion he thanked them for the very cordial way in which they had listened not only to his health but their own. He hoped that Mr. Bacon's response would say something in connection with the Southern Counties Branch. (Cheers.)

Mr. W. B. BACON said he felt very keenly the position in which he had been placed in having to respond to the toast on behalf of the Southern Counties Branch. It afforded him great pleasure, however, to say that the Branch was in a most flourishing condition. It had not been in existence about four years, but during that time they had increased the number of their members from thirty to eighty. He trusted it would continue to increase, and make the same rapid strides as the parent Association had done. The holding of the annual meeting of the Association in Brighton had given the Southern Counties Branch very great pleasure, and he thought the members would agree that the meetings had been most successful. The success of the meetings undoubtedly had been in a great measure due to the energies of the members who resided in Brighton, and for the way in which they had undertaken the work. He thanked the company for the kind way in which the toast had been received.

Mr. JOHN TOMES, who received a perfect ovation on rising, said in proposing "The Medical Profession" that no one knew better than himself the close connection between the medical and the dental professions, and how much the former had contributed to bringing the latter to the front, and to the success of the movement they were celebrating. Personally he owed a very great debt of gratitude to the medical profession, for it was at the suggestion of one distinguished member, supported by the Council of another, that he turned to his purpose of entering upon the practice of general to dental surgery; the one the professor of medicine, the other of surgery, at King's College, and each members of the medical staff of King's College and of the Middlesex Hospital—Sir Thomas Watson and Mr. Abbott. The name of the latter should be known to every dental practitioner as the first person of eminence and effective influence

who had given his attention to the question of the need of training of dental practitioners, and who had the power to command the attention of others similarly placed. Mr. Arnott brought the subject before the Council of the College of Surgeons of England from time to time, until Sir William Lawrence and Mr. Green supported him in his views, and agreed in the opinion that it was the duty of the College to take steps for the encouragement of the study of dental surgery; and the late Mr. Charles Wilde, the solicitor to the College, drew the clause in the Medical Act of 1858, which enabled the College to obtain its dental charter and establish its dental department, the successful working of which, through a period of twenty years, laid the foundation and rendered practicable the successful application to Parliament for the Dentists Act. The great surgeons whose names have been mentioned, were elected as the surgical section of the Council of the Colleges, and ever afterwards took an active interest in all that concerned the education and examination of the newly created dental licentiates.

When the Dental Bill had been drafted, copies were submitted to the Colleges of Surgeons of England, of Scotland, and of Ireland, and their approval of the measure obtained, without which backing John Lubbock would not have ventured to support it in the House of Commons. But sufficient medical support had not been gained. Lord Lyon Playfair blocked the Bill on the ground that the University of Edinburgh would oppose any Bill giving the power to issue a surgical qualification in a branch of surgery unless equal rights were accorded to itself. This alleged defect was amended by extending the right to all medical authorities which held the right of giving, after examination, surgical qualifications. The Bill was also submitted to the Medical Council, which gave an indirect approval in proposing the insertion of several clauses of the Bill in place of others contained in the dental section of the medical Bill then unsuccessfully introduced into Parliament.

It will be seen by all who will look into the question that it has been impossible to get the Bill through without the active assistance of the medical profession. And it may be true that they helped us to get a better measure than they have been able to secure for themselves, especially in respect to the penal clause, the inefficiency of which they were unable to amend in the late Bill of 1886.

To the mind of the speaker, the narration of the foregoing facts, one of the fast-diminishing band of those who can speak from personal knowledge is rendered desirable by the recurrence now and again of talk about the independence and severance of dental surgery from general surgery, of cutting the branch off the parent stem, so as to produce a rootless tree, for the roots or principles of all branches of surgery are one and the same, and indivisible since the establishment

this representative Association (itself a natural and necessary outcome of the Dentists Act). Its annual meetings have everywhere been welcomed heartily by the medical practitioners of the towns, and in the neighbourhoods in which the gatherings have taken place; their meetings, where such existed, have been placed at our disposal, and they have joined us at our social gatherings. At what may be called our ministerial banquets they had been our guests, and he felt sure that at our last, the toast he had been deputed to propose, namely, the "Medical Profession," would be received with great and sincere cordiality. With the toast he coupled the name of Mr. Hodgson.

Mr. G. F. HODGSON in responding said that he was sure that close fellowship existed between the two professions; the one must be a strength to the other; it, therefore, became them to assist each other in every way that they could. He thanked them for the way in which they had received the toast, and at the same time he congratulated the members of the dental profession on the position they now occupied. He complimented Sir John Tomes on the part he had taken in raising the general standard of the dental profession, for it had now assumed an altogether higher tone, both in the scientific knowledge which it possessed and in the manner that education in dental surgery was carried on.

Mr. F. CANTON proposed "The Mayor and Corporation of Brighton, and the Commissioners of Hove." He expressed the thanks of the Association to the Mayor and Corporation for so kindly placing the building in which they now were at their disposal, for it had enabled them for the first time to hold every part of their meeting in one building, and that had to a large extent accounted for the great success of the meetings. He regretted that the Mayor of Brighton was not present, but he was sure he would be ably represented by the Town Clerk, Mr. Tillstone, (seated at the end of the table.)

Mr. TILLSTONE, in responding to the toast, said he deeply regretted that the Mayor was unable to be present. Mayors, however, were public servants, and their time was not always their own. A little over a century ago Brighton was nothing but a sea village, but now, notwithstanding that Brighton and Hove had two local governing bodies, it was one town having 150,000 inhabitants. The desire of the Town Council was to maintain the position of the town, and if possible to improve it: and amongst all the duties they had to perform there was none which they performed with greater pleasure than when they welcomed an important association like the British Dental Association to the town. They had had the pleasure of welcoming to Brighton the British Association, the Social Science Congress, the Church Congress, the British Medical Association and other great associations, to hold their annual meetings there, and he was sure when the application came for the use of the rooms

of the pavilion for the meeting of the Dental Association it was the greatest heartiness that it was granted. The Town Council would be glad to know that the members of the Association were having successful and interesting meetings, and he was sure they would join with him in the hope that the meetings would be to the advantage both of the Association and of the profession generally. He thanked them most heartily on behalf of the Corporation, Brighton and the Hove Commissioners. (Cheers.)

Mr. J. H. REDMAN proposed "The Dental Benevolent Fund." In his toast, he said, was one which should appeal to the sympathies of all. He thought it a most disgraceful thing, considering that there were about 800 dentists on the Register, not more than 400 of whom contributed to the Fund. The amount contributed last year was only £243. The Fund was not a charitable one in the strict sense of the term, for it assisted the widows of dentists in helping them so that it did not make paupers of them. The children were put to school and properly educated, after which they were put to learn a useful trade or calling, by which they could earn their own living. He thought, therefore, that they should, one and all, make up their minds to subscribe to the best of their ability. Every member of the Association could afford at least half-a-guinea a year. He hoped that if there were any present who had not already subscribed they would do so. Mr. Hutchinson was well acquainted with the working of the Benevolent Fund, and he would be able to give most valuable information respecting it. He had great pleasure in proposing "The Benevolent Fund," coupling with the toast the name of Mr. S. J. Hutchinson. (Cheers.)

Mr. S. J. HUTCHINSON, in responding, thanked the company for the hearty way in which they had received the toast. They had on that day made some alterations in the rules which did not affect the principle of the Fund at all, but which it was hoped would make the working of the Fund more efficient and practical. They felt that it was not fair that the Fund should be left constantly in the hands of three men, and they had therefore elected two more gentlemen who would be able to help them in their deliberations. They thought that in that way they would be able to secure the sympathy of everyone throughout the United Kingdom. With regard to the proposed alterations in the rules, he thought they would all agree that the object had been to promote the usefulness of the Fund, and to extend the field of its operations. They were very much indebted to the Honorary Secretaries of the Branches for the way in which they had helped the Fund during the year. There was not a branch member of the Association at which there was no collecting box. The contributions received in that way last year amounted to £21, in addition to ordinary subscriptions received all over the kingdom. Since the establishment of the Fund in 1883 they had received £2,496, and had expended in behalf of those who had come under their

1897; the annual expenses were £110, including printing and stationery, and they had invested according to their rules a sum of £1,100. The total expenditure, therefore, had been £2,100, and there was a small balance of £250, which they were going to spend during the coming year. It was a *sine qua non* for recipients from the Fund that they should be on the Dental Register. They were at the present time supporting six widows, and the children were being educated and fed. He wished to express the gratitude of the Executive Committee for the kind way in which their healths had been drunk, and the manner in which their efforts had been supported by the members at the general meeting. He also desired to express the gratitude of the recipients of the Fund for the benefits conferred upon them. But for the aid of the Fund many of them would have been in the workhouse. A personal investigation into the cases had been undertaken by Mr. George Parkinson, the Honorary Secretary, to whom they all owed a deep debt of gratitude. They had in the chair Mr. J. Dennant, one of the earliest members of the Fund, who with Mr. Oakley Coles formulated the rules and organised the Fund, and it was a pleasure to him to be able to express their gratitude to those gentlemen for the successful success which had attended their earnest efforts. (Cheers.) The CHAIRMAN announced that the collection made on behalf of the Fund amounted to £12 1s. 6d. (Cheers.)

Mr. MACLEOD, in the absence of Mr. J. Cornelius-Wheeler, submitted a toast of "The Press." They were all, he said, extremely indebted to that fourth estate which he then had the pleasure of calling upon to honour. They might speechify for days and weeks and years, but it was the gentlemen of the press who brought it all before the public, and in that way acted as missionaries for the cause which they espoused. Not only were they indebted to the public press, but to the representatives of the JOURNAL OF THE BRITISH DENTAL ASSOCIATION. From the latter they claimed the duty which it performed on the other hand, the general press owed them no allegiance whatever, so that the good it did them meant simply hard service on its part. As he did not know any gentlemen connected with the local press, he could not associate any name with the toast; he would therefore, call upon Mr. Underwood to respond as Editor of the British Dental Journal. (Cheers)

The toast was received with musical honours.

Mr. A. S. UNDERWOOD, in responding, said that the health of the Press and of the Journal which he represented, which had been so kindly referred to, depended like the health of other people upon its diet. After the candid intellectual feast that they had had that day it ought to be very much more healthy. From a journalistic point of view these meetings could be memorable owing to their having discussed the question of aesthetics in a way that he thought the subject had never been discussed before. He thought the papers and discussions on this subject

would form a landmark in the literature of this important subject. If anything could have been added he wished that there had been a larger representation from the northern part of the country, perhaps a further discussion of the question might take place in Scotland when a stronger expression of feeling might be evoked in favour of chloroform. Not only would he allude to the intellectual feast of discussion, but he suggested that the journalistic store might be fed by tit-bits, and that was a matter of supreme importance. It seemed to be generally thought by the members that it was necessary to send long contributions to their Journal. The matter of fact what they most liked was small items—little paragraphs of interest which might be written in a few lines. In that connection a movement had been suggested during the meetings by Mr. Caush for organising a special column for the discussion of the minutiae of microscopy. He thought the Journal would be increased in value if it were possible to have a special column devoted to therapeutics as well. Such communications would add immensely to the value of the Journal, and their brevity would avoid embarrassment in its conduct. In responding for the Journal Mr. J. W. Nias felt that to some extent he was responsible to the Publishing Committee, and he would say that his colleagues on that committee performed their duty with a sincere desire of representing the views of the majority. The position was a difficult one, and therefore occasionally no doubt things might occur in the shape of omission, and possibly insertion that they wished had not occurred. At the same time he hoped that the members would extend a certain leniency towards him on points on which they differed, and although the Publishing Committee was necessarily subject to and even welcomed criticism he was sure the members would grant that it did its best to represent the Journal fairly and impartially.

Mr. J. W. NIAS, in response to a general call, replied on behalf of the local press.

Mr. FELIX WEISS proposed "The Health of the Visitors." He said he thought the medical profession and those who had influence in it ought not at the present advanced stage of dental science to allow itself to give testimonials to men who were mere charlatans, humbugs, men whom in their sober moments they could not recommend. At the meetings of the Association they had always been gratified by the presence of many visitors, and whoever these visitors were, he was convinced they always had to acknowledge that the Association had always extended to them the right hand of friendship. The dental profession was no longer what it was in his earlier days when he was always afraid to say that he was a dentist. That position, however, had changed, and they were now standing in the same position and on the same platform as medical members of the profession. The Dental Act was now passed, and in that and other things

men hold up their heads and look to their independence, and say to the visitors, "We are just as proud of our position as you are of yours." He would couple with the toast the name of Dr. Hayman. (Cheers.)

Dr. HAYMAN, the President of the South Eastern Branch of the British Medical Association, responded.

Mr. Le Professor DUBOIS, in acknowledging the toast, thanked the Association for the kindness and hospitality which had been extended to him and those who had accompanied him from the Continent.

Dr. BONWILL, on being called upon, also responded. It was extremely gratifying, he said, to meet a society so young, having been in existence eight or nine years, but which had made such great progress. The meetings had been of great interest to him, and he would have been proud to go home if he had heard nothing else but papers and discussions on anæsthetics.

Mr. MORTON SMALE, in proposing "The Health of the Chairman," which toast was most enthusiastically received, said it required very few words to commend the toast which had been placed in his hands. The very able way in which the Chairman had performed his duties was sufficient to commend the toast. It was always difficult to propose a Chairman's health, for the simple reason that that gentleman was present. Had the Chairman not been present, he (Mr. Smale) would have been able to say so many more flattering things than he could in his presence. He could say that Mr. Dennant had at all times been ready to sacrifice himself for the good of his profession, and had been one of the earliest to move for dental reform. In addition to that, he could say that their Chairman was a good friend, a loyal friend, a cordial host, a true man and a perfect chum. (Cheers.)

The CHAIRMAN, in replying, said it was very difficult indeed for a man to say anything about himself. He was very grateful for the very cordial way in which the toast had been so kindly proposed and so cordially received. At that late hour he would not detain them with many observations, but there were a few things which fell upon his lot to say. What he had done for the profession had been with a genuine desire to promote its interests. His shoulder had been one of many which had been placed to the wheel of progress. He could not forget the work which had been done by their older members, represented by Sir John Tomes; nor that performed by younger members, represented by Mr. Smith Turner. They were all doing their best to assist them. They were all animated he was sure by a sincere desire to promote the best interests of the profession, and to promote the public with capable, well-educated and highly trained men, whose power to alleviate pain and improve health was only equalled by their expertness of manipulation, and whose modes of practice and conduct were honourable alike to their patients and their professional brethren. Their President had on the previous day given

words of welcome to them, and the President of the Southern Counties Branch (Mr. Bacon, of Tunbridge Wells), had supplemented his expression of welcome, and, therefore, they would excuse him. He spoke simply as the mouthpiece of his professional brethren in Brighton. It was a great delight to receive the Association in Brighton, and they had worked with a will for the success of the meeting. They had been assisted by a large number of gentlemen whose names were too numerous to mention. It was, however, brought into prominence the names of four gentlemen who had done very much to promote the interest of the meetings. The first name he had the pleasure to refer to was that of Mr. Redman, Honorary Secretary of the Local Organising Committee. (Cheers.) He felt a difficulty in saying all he wished to say about the gentleman's presence, but to be honest he was compelled to say that Mr. Redman had been thoroughly efficient, and very courteous, and his courtesy of bearing and kindness had enabled them to get on without any friction whatever. A very large amount of the success of the meetings must be put to his account. Mr. Harrison, Honorary Secretary of the Exhibits Committee, deserved the same thanks; and Mr. Welch, the Honorary Secretary of the Demonstration Committee had been most anxious to do his best to provide with an instructive entertainment the following morning; and, not least, there was Mr. Caush. They had all seen how well he had done his work, but a great deal of it had been unseen, for a considerable portion of his leisure time had been spent last winter in organising the interest of the meetings. His microscopic section cutting had been a very pleasing diversion, and he (the Chairman) thought that some practical demonstration of that kind would always lend a great deal of interest to their annual meetings. He would like to say how much they were indebted to a gentleman not in Brighton, Mr. Booth-Pearsall, for his great kindness in coming to Brighton to assist them in organising their meeting. After that gentleman's experience in Dublin his advice was most valuable. He thought the gentlemen present from Ireland would carry back their thanks to Mr. Pearsall for all that he had done. He must also mention their Honorary Secretary, Mr. Morgan Hughes. (Cheers.) He thought that he specially ought to mention that gentleman because he had given assistance in this work, but because he had filled a breach, and stepped into his shoes. He should like to mention a personal matter with regard to his friend Mr. Redman. When he endeavoured to establish the Southern Counties Branch there was no man who supported him more heartily and more than Mr. Redman, and he wished publicly to thank him for his able assistance. He was sorry that in Brighton they could not have had them such excursions as they had last year in Dublin. With a day at their disposal, it was impossible to organise an a

curion. With a whole day they might have taken them to many places of interest. Brighton was not a university centre as was Dublin, and they had not corporate bodies to receive them in the handsome manner in which they were received last year, but they had endeavoured to make up for it in some measure by giving the members the heartiest welcome they possibly could, and he hoped when they returned to their duties they would look back with pleasure on their meeting at Brighton as a provincial success. (Cheers.) He would ask them to unite with him in drinking the health of those four gentlemen who had done so much for the Association, coupling with the toast the name of Mr. Redman. Mr. REDMAN responded, and the company then separated.

DEMONSTRATIONS.

Given at the Brighton Dental Hospital, Queen's Road.

Dr. F. HEWITT, M.A., demonstrated the use of the mixture of oxygen and nitrous gas; about 100 were present. Five cases were undertaken to illustrate his method—in each case the patient was thoroughly anæsthetised—and passed off very successfully. Mr. Walter Harrison (Brighton) operated in four cases and Mr. G. Brunton (Leeds) in one.

At the close of the demonstrations Dr. Hewitt again explained the method and apparatus, which was received with loud and prolonged applause.

Mr. G. BRUNTON (Leeds) demonstrated the "Howard" or extended method for extracting under the deeper anæsthetics. Dr. Hewitt administered gas and ether. Being somewhat late in the morning the majority of the members had left for the Royal Pavilion. Those who witnessed the operation expressed great satisfaction.

Dr. BONWILL (Philadelphia) demonstrated "Rapid Breathing;" the room was crowded to excess, but the patient failed to arrive at the stage of unconsciousness, and was referred to the room below and received the oxygen and gas mixture.

At the Royal Pavilion.

Mr. W. HERN.—Porcelain inlaying, cutting his own plugs. Operations were conducted both in the mouth and on models. Mr. Hern's method was warmly received, and exceeded other styles in neatness.

Mr. T. MANSELL (Birkenhead), filled an approximal cavity making cohesive contour filling.

Mr. MAXWELL (Hastings).—Cohesive contour (automallet) mesial left central.

Mr. C. B. STONER.—Immediate root filling.

Mr. J. H. GARTRELL showed some specimens of his movable bridge work.

Dr. BONWILL.—The use of smooth oval-pointed pluggers in hand electric and mechanical mallets, as well as any cohesive or non-cohesive foil ; also his dental engine. Dr. Bonwill interested the audience with dental conversation.

Mr. C. A. HAYMAN showed his interesting and unique case of artificial palatal and facial restoration, which was highly appreciated.

Mr. G. CUNNINGHAM showed a case of implanted upper bicuspids which was quite firm and a successful operation performed nearly two years ago.

Mr. W. HARRISON filled a crown cavity in an upper molar with William's Crystalloid Gold, using mainly hand pressure and finishing with round pluggers and Abbott's mallet, and using Campbell's horizontal engine (the driving wheel being under the chair—a great help with nervous patients), and Sperling's wool pads ; also showed a simple matrix made from Brown's polishing strips and fixed with a piece of amadou or wood.

Mr. Harrison also explained the gold and porcelain crowns made by Messrs. Lennox, J. H. Redman, G. Cunningham, D. E. Caush, J. H. Watford and himself, which included specimens of the Buttner and Balkwill systems.

Messrs. JONES and LENNOX filled an approximal cavity with gold, using the Thomas and Lennox pneumatic mallet. They inserted a piece of bridge work made at the meeting, an account of which appears under Cases in Practice.

Mr. COXON showed his new gas union.

Mr. CHARTERS BIRCH showed a new electric engine.

A demonstration on hard section cutting, staining, and mounting was given by Mr. D. E. Caush, L.D.S.I., assisted by Messrs. A. Burt, T. Channing, D. Gabell, W. Gabell, T. Naylor, W. Wood. The method shown was that suggested by Mr. Charters White in the BRITISH DENTAL ASSOCIATION JOURNAL and was as follows. The tooth, "if either a longitudinal section was required or a section showing enamel," was ground down on a lathe, or if a transverse section of the root was required the lathe

was sawn off with a fine saw, as thin as possible; if necessary it was then mounted on a piece of wood by means of a little softened shellac, the section being pressed into the shellac, and when cold it was either ground or filed as thin as possible. The section was then taken and placed between two pieces of ground glass with a little pumice powder and plenty of water, while with a rotary motion of the upper piece of glass, the section being constantly turned over, until it became very thin. This was then placed between two pieces of glass that had been well used, and with very little pumice and plenty of water the rotary motion is continued until the section is thin enough. The worn glass produces a somewhat polished surface; it is then thoroughly washed in water, and afterwards in distilled water. If there is any exostosis, or it is thought desirable to stain the membrane, the section is placed in an aqueous solution of aniline dye and allowed to remain for a few minutes. Whilst the section is in the dye take a glass slip and a cover glass; clean each and see that no dust remains on the surface of either. When they are cleaned take a small quantity of hard canada balsam, warm the glass and place a small quantity of the balsam on the slip, also place a little on the warm cover glass. Now take the section out of the dye and drain it, then place the section in the palm of the hand, and with one of the fingers of the other hand rub the surface of the section so that the surface water may be removed whilst the tubuli, canaliculi, &c., remain filled with the solution; mount in the balsam in this condition so that the structure may be well shown.

To mount the section place it in the centre of the balsam on the slip, then place the cover glass on warm and gently press down and if necessary keep under pressure until the balsam sets. When the balsam is hard it is cleared off with any of the solvents (chloroform, benzole, methylated spirit, &c.), and when it is cleaned the slide is ready for putting on the ring of cement. This is done by centering the cover glass on the turn table, and whilst the slide is rotating touch the edge of the cover glass with a camel-hair brush charged with Aspinall's enamel. This gives a finish to the slide and also prevents the edge of the cover glass from being chipped. The advantages of the enamels are, they dry quickly, can be obtained in almost any colour, are always at hand, are not affected by moisture, and do not leave the glass if there is any concussion.

The demonstrations were intelligently carried out, each of the gentlemen manifesting a desire to give the interested visitors every

opportunity of thoroughly understanding the various stages of proceedings.

(*To be continued.*)

Midland Branch.

AN informal meeting of members and associates will be held at the Halifax, on October 26th. This meeting will be open for the discussion of any professional topic, and members desiring to introduce any matter are invited to communicate with the Secretary, so that a full programme may be announced in the October Journal.

Forms of application for members, or associates, may also be obtained from the undersigned.

W. H. WA.

6, Oxford Street, Liverpool.

ORIGINAL COMMUNICATIONS.

The Use of Sulphuric Ether as an Anæsthetic in Dental Operations.*

By F. R. CRUISE, M.D. Dub., &c.

CONSULTING PHYSICIAN TO THE DENTAL HOSPITAL, DUBLIN.

GENTLEMEN,—Dr. Stack, knowing that I have paid more ordinary attention to the use of ether in dentistry, has done me the honour of asking me to write a short paper on the subject, which he kindly promises to read at the meeting of the Dental Association.

I much regret that an engagement on the Continent, which I cannot possibly evade, disables me from attending the meeting in person, from reading the paper myself, and from taking part in any discussion to which it may give rise.

I do not intend on the present occasion to occupy the valuable time of the Dental Association by entering upon any collateral topics, such as the chemistry or physiology of the subject, but consider it more suitable to make my brief communication *and solely practical*.

It may not be unimportant for me to explain how it came to pass that I acquired a special experience in the process of anæsthesia. At an early period of life I was appointed]

* Read at the Annual General Meeting of the Association at Bristol, August, 1889.

Medical Officer to a large metropolitan hospital, and it was part of my duty to anæsthetise all the patients about to undergo operations. This was in the year 1861, when chloroform was the agent most in favour. A long residence as pupil in the Richmond Hospital had already made me tolerably familiar with the administration of chloroform, and in my new sphere I had most ample opportunities for increasing my experience.

In fine, I may say that for *twelve years* I was constantly engaged in chloroforming patients for operation.

During that period I can truthfully add that I suffered terrible anxieties, so much so that even still I look back upon it with horror. Happily, I never had a death, but I know I escaped fatal results by a very narrow margin on at least three occasions.

Impressed with the great responsibility of my position, I longed to discover some means of inducing anæsthesia with greater safety—to find a drug which would not necessitate unceasing anxious watching of the pulse—and above all, which would not, despite every precaution, take me unawares, as I had often seen chloroform do, so far as the development of most alarming symptoms.

In the year 1871 I had the good fortune to see the late Dr. John Morgan, of Dublin, using ether in the Lock Hospital, and I felt at once that I had seen what I so longed for.

Since then (*just eighteen years*) I have used ether almost without exception in the numerous cases which required an anæsthetic, and in that whole experience I never observed a symptom to cause me grave uneasiness.

Respecting the use of ether in dental operations, I had reason to rejoice especially at its re-introduction in Dublin by Dr. Morgan. These operations are most easily performed in the erect or semi-erect posture—the very position in which chloroform seemed most apt to induce cardiac failure.

So far as my experience goes the invariable effect of ether is to improve the heart's impulse and the circulation generally. Moreover, the vapour of ether undiluted is practically safe with ordinary attention; while, as we know, chloroform vapour is most dangerous if exceeding 4 per cent. in strength.

I take it for granted that in short dental operations, such as the extraction of one or two teeth which can be removed quickly—say in thirty or forty seconds—without likelihood of fracture or other delay, the most suitable anæsthetic is nitrous oxide. With that subject I have no concern here.

On the other hand, I am strongly of opinion that in protracted operations, such as the clearing away of a number of teeth and stumps—which occupy from three to five minutes—the inhalation of ether is both safe, satisfactory, and perfectly convenient.

The mode of proceeding which experience has led me to adopt is as follows :—

First, I arrange that the patient shall not have taken food or liquid, for at least four hours previous to the inhalation. The most important condition in order to avoid nausea and vomiting.

Next, I see that the dress is so loosened and arranged that no restraint whatever is exercised upon respiration.

Then, having placed the patient in position, reclining as the dentist's chair permits, I stethoscope the heart and proceed to give the ether.

I think it always well to examine the heart, so as to know the condition of that organ, and obtain direction for my movements; but I may add that there are very few, if any, conditions of the organ—short of a state of depression indicating impending syncope—which would prevent me from proceeding with etherisation.

All being ready I commence to administer the ether. For this purpose I always use Allis's inhaler, which is of the simplest and most sensible construction, allowing of the exhibition of ether vapour, either with the admixture of air, or nearly pure.

This inhaler consists of numerous folds of a cotton fabric, pressed closely together by a metal framework, the whole being enclosed in an india rubber case open at both ends.

The ether is poured on the cotton fabric, and the outer covering being of a shape to fit accurately over the nose and mouth, when it is applied the patient is made to breathe a vapour of ether and air. The latter can be diminished in quantity by closing the india rubber over the free end of the inhaler. All this is very important, as we shall see later. I commence with one ounce of ether on the inhaler and rarely have to exceed four ounces in any case of etherisation for a dental operation.

If the patient is an adult and not nervous, I always commence with ether alone. Let me remark here that I always use pure ether, sp. gr. 730, and never the methylated kind. The pure ether is less irritant, more effective, and causes much less headache and subsequent disturbance.

Occasionally it is a little difficult to some patients to bear

ether vapour at once, as it irritates the larynx and induces cough and a feeling of suffocation ; therefore the inhaler must be cautiously brought over the mouth and the patient encouraged to bear it.

If he does so a very short inhalation suffices to dull the sensibility of the larynx, the head is felt to throb, the face to flush, some vertigo is experienced, the respiration becomes rapid, and then drowsiness comes on. From this moment the ether is borne without inconvenience and may be pressed. This is readily done by pouring fresh ether on the cotton fabric, and by closing over the india rubber covering of the inhaler so as to lessen the quantity of atmospheric air.

In certain cases, especially with children and nervous subjects, female or male, it is not possible to get over this stage without the use of a few inhalations of bichloride of methylene, or the administration of nitrous oxide. Still, this difficulty is rare and I very seldom find it necessary to resort to anything but the ether alone.

I fully admit that this *initial stage* of etherisation is the one which requires most skill and tact on the part of the administrator. Once passed all the rest is easy. The ether may now be pushed until the stage of "struggling" ensues. A gentle but strong assistant easily keeps the patient in position, and the ether being persevered with complete insensibility comes on, indicated by some terror, and absence of reflex sensibility of the cornea.

When this point is reached the inhaler may be removed and the mouth opened with the gag forceps, and then the operator may go to work for from three to five minutes, with the conviction that the patient feels nothing. When he awakes he will assure you of this even though he may have groaned and resisted somewhat.

If the ether is administered in the way I have described I find that an average of five minutes suffices to induce perfect insensibility—the time being, however, prolonged to double that period if resistance is made.

If, during the operation, the patient seems to become partly conscious, I wipe out the mouth clear of blood and saliva, and reapply the inhaler. A very short time now suffices to reproduce complete insensibility.

The operation completed the mouth should be cleansed out with a sponge, the face bathed with cold water, and very soon the patient is awake, feeling somewhat stupefied, and with more or less of headache. The latter is seldom troublesome if pure ether is

used, and the inhaler such as I recommend, and not one of many varieties in which the vapour inhaled is a mixture of ether and the patient's own exhalations breathed over and over again. I have long since abandoned all such contrivances, which, though economical of ether, are certainly not so of the patient's comfort.

It is sometimes objected to ether that it is slower in admission than chloroform, and slower also in recovery. This is a small disadvantage, considering its greater safety, as proved by statistics; but I am not at all sure that if properly handled it requires more time than its more dangerous rival. I lately used ether myself, to avoid the pain of the extraction of a very loose tooth, and I was able to write a letter and see a patient in less than half an hour of the moment when I sat down to undergo the operation. I cannot say that the after effects were considered more disagreeable than those I experienced from the use of nitrous oxide on a previous occasion. On many occasions I have entered the dentist's house with patients, and left them, all completed, within half an hour. As to the slowness of recovering, if it occurs it causes little inconvenience, as all dentists have a room set apart for patients who require the use of etheretics during operation.

A more tangible objection to ether is the nausea and vomiting it is liable to cause, even in greater degree than chloroform. This complication may be avoided in nearly all cases.

Firstly.—By arranging that the patient shall not have taken food for at least four hours previously.

Secondly.—By using nothing but pure (not methylated) ether, and giving it as quickly as seems safe.

Thirdly.—By carefully cleansing the mouth during the operation—which can be done with a small sponge held in the forceps—so as to prevent the patient from swallowing the abundant mucous secretion caused by the ether, and the blood oozing from the operation. If either the mucous or blood reaches the stomach they will certainly act as an emetic.

It will be asked, what signs should the etherist watch in order to avoid danger to life?

Firstly.—I always watch the heart, and can aver that I have never yet seen it fail under ether; on the contrary it seems invariably to improve. I do not mean to suggest that compressed recklessly ether may not so poison the nerve centres as to paralyse the heart, but I believe it will never do so if carefully given.

Herein lies its incalculable advantage over chloroform, which, however carefully administered, will sometimes cause sudden, unforeseen, and irremediable syncope.

Secondly.—He should observe the respiration carefully. If any danger exists in etherisation it is certainly here. Occasionally the mouth becomes fixedly closed, and inspiration is impeded. All that is needed is to open the mouth with the gag forceps and draw forward the tongue.

A greater risk arises in those cases where, about the stage of struggling, the chest walls seem to grow fixed, and lividity of the face ensues. I have always found that the removal of the inhaler for a short time, with cold sponging of the face, sufficed to bring all right. Were it otherwise I would at once adopt artificial respiration, but I have never yet been obliged to do so.

Thirdly.—If vomiting occurs while the patient is stupefied with the ether, it is necessary to turn him promptly on his side, and see that the vomited matters have free exit, and do not fall back into the larynx and trachea. If they did tracheotomy might possibly be required. I have never seen such a case.

Finally, it may be asked are there any cases in which the use of ether is contra-indicated. I admit there are some, but very few and far between.

In cases of operation done by artificial light—a very rare incident in dentistry—its inflammable nature renders ether unsuitable.

In patients with bronchitis, emphysema, advanced Bright's disease, degenerated arteries—which might give way under the increased tension it causes—the risk of etherisation is increased. However, in these cases a severe dental operation is to be avoided altogether, and it seems doubtful whether any other anæsthetic would be practically safer.

In conclusion I beg to thank the British Dental Association for the honour they have done me in permitting me to lay before them my *personal experience*, which has long since led me to the belief that in dental operations of *any duration* ether is the safest anæsthetic, and if properly managed very satisfactory and convenient.

Chloroform.*

BY W. BOWMAN MACLEOD, L.D.S.

THE subject which I have the honour to introduce which has given rise to much discussion, and upon there still remain many conflicting opinions, but I need say that unless I were convinced of its general usefulness and its special advantages in *certain* dental cases, I would not venture to uphold its use before this Association, and then in the heart of a district where it is looked upon by with trepidation, condemned *in toto* by not a few, and, say, avoided by most when any other anæsthetic can be or by crook hold out the faintest prospect of enabling operator to accomplish his work.

Coming, as I do, from the city of the cradle of chloroform where for the last forty-two years it has been the favourite and universal anæsthetic, and that too not because no other has been sought and no other been tried, but simply because no other has yet, after fair and prolonged trial, given so much satisfaction in answering and procuring the true purpose of an anæsthetic, viz., immunity from pain, utter unconsciousness of surroundings, relaxation of muscular tonicity, prompt recovery and freedom from subsequent inconvenience. Last, though not least, extreme simplicity in its administration and agreeableness in its inhalation.

I grant you that there are many men who occupy distinguished places in the medical and one or two in the surgical world, who will not admit that by any possibility any dental operation justify the use of an anæsthetic, the prohibition of which is attended in the slightest degree by the possibility of death or of subsequent constitutional impairment, far less one whose track is marked here and there by records of fatal termination. But were this argument carried to its logical conclusion, it would deny the use of all general anæsthetics, the very nature and essence of which is to abolish for the time being the principal functions which constitute the vital centre of our animate machine. Now we know we cannot have the outer ramparts of a citadel re-

* Read at the Annual General Meeting of the Association at Bristol, August, 1889.

without rendering it more open to the attacks of the enemy, hence all anæsthetics are more or less dangerous.

On the other hand, we who are dentists know full well that there are many cases which require our operative interference, the pain attendant upon which is almost beyond average healthy human endurance, and which, if inflicted upon a body already weakened by suffering physical and mental, would undoubtedly produce an amount of prostration which might terminate in death, or the recovery from which would be slow and probably imperfect. Under such circumstances it is incumbent upon us as dentists to accept the responsibilities which follow the practice of our profession, and in using an anæsthetic to use that which gives the greatest good to the greatest number.

In the administration of chloroform, as indeed in that of any anæsthetic, grave responsibilities are incurred, and its exhibition should be relegated to the care or guidance of a qualified practitioner who gives his undivided attention to the action of the drug. This being so, in view of the now pretty well ascertained sources of danger and their antidotes, the risk is but small and the attendant good more than amply justifies the administration. In connection with this it is curious to note that the authorities of to-day have but emphasised and systematised the methods and rules advocated by Sir J. Y. Simpson and his fellow practitioners, and these are that the drug should be pure, the stomach free from undigested food, the patient recumbent, and all obstructions or possible obstructions to free breathing removed. This then being the condition of the patient the surroundings should be comfortable and the demeanour of the operators and attendants provocative of confidence and no complicated apparatus should be used in its administration. The simpler the means of administering it the better, a folded towel or a piece of flannel stretched over a convex wire frame being all that is required, and not only all that is required, but the best that can be used, as they induce no alarm on the part of the patient, and permit (what is an absolute necessity) the operator to *feel the breathing* of the patient and watch any change of the normal appearance of the face which may presage approaching danger.

The time for operating is when the patient is said to be

"under." This is indicated by the suspension of all reflex action except those of respiration and circulation, and can best ascertained by the condition of the conjunctiva. An operation before this condition is reached is fraught with danger at any time and more so when the fifth nerve is involved. It sometimes is the cause of death, and under such circumstances the result cannot justly be attributed to the drug.

The dangers and troubles attending chloroform administration are respiratory and cardiac.

The arrest of respiration when sudden may be due to the falling back of the tongue or to the presence of foreign bodies. Narrow the possibilities of such occurrences by removing artificial teeth, &c., from the mouth and having the head tilted back, though not to the same extent as recommended by Howard, before beginning the inhalation. If they occur, in case of the first remove foreign bodies at once. In the case of the second turn the head on one side and pull the chin forward or use the glosso tilt of Dr. Foulis, or other convenient means of pulling forward the tongue and opening the glottis. If these methods fail to give immediate relief then artificial respiration must be resorted to. In the case of sickness turn the patient completely on his side; when vomiting ceases sponge the mouth and resume the chloroform. If the stomach is empty and patient only retches push the administration of chloroform and so abolish the reflex act.

The heart complications are those associated with and those secondary to difficulty of breathing, when the right heart becomes distended and congestion results. The restoration of respiratory action usually removes this dangerous complication, but in especially anxious cases the external jugular vein may be opened, or as a last resort the right ventricle may be punctured, blood withdrawn and the endocardium at the same time stimulated. Should the action of the heart become depressed, as indicated by extreme pallor and weak and intermittent pulse, a hypodermic injection of ether may be given or it may be administered on the towel. Chloroform is contra-indicated only in the suffering from weak and intermittent heart.

The best antidote to all chloroform complications is fresh air.

The advantages attending the use of chloroform in p

ference to other anæsthetics are extreme simplicity of its administration and agreeableness in its inhalation. It may at first sight appear strange, that in discussing the relative merits of agents, prominence should be given to a method and quality which have apparently so little to do with the intrinsic qualities or effects of the drug. But we must not forget that in exhibiting drugs to the human being we are dealing with a complex machine in which the psychological plays, if not an equal part to the physiological, at least a very important part, in maintaining or suspending or even stopping its functions altogether. Its simplicity and agreeableness therefore tend to induce a confident and tranquil mind and reduce immensely the probabilities of shock—a cause of death which I think is more frequent than that from the toxicological effects of the drug itself when administered by an expert with an expert's caution.

It does not irritate the fauces nor induce an extra flow of saliva, the latter being a distinct disadvantage in the use of ether for operations in dentistry. It induces a profound narcosis, which, when attained, endures sufficiently long to permit of a very painful and prolonged operation to be performed before return of consciousness, or otherwise narcosis is easily maintained without interfering with the free access to the part being operated upon. The usual precaution being taken with regard to food it is very rarely attended with sickness. It affords a pleasant and rapid recovery and is more free than ether from subsequent inconvenience or complications. There is only one pathological condition which contra-indicates its use, and this may be got over in most cases by the prior administration of a stimulant such as alcohol; with ether there are many.

Chloroform has also this further advantage—that the causes and methods of death having been pretty well ascertained it is quite within the power of the skilled administrator to avert fatalities except in those few cases of fright or idiosyncrasy which cannot be eliminated or detected, and which always give a certain percentage to the general as well as the particular death rate.

As an illustration of the first I would again cite the oft-repeated story of the fatal incident in connection with its first projected administration in surgery.

Sir James Y. Simpson was to administer the new anæsthetic.

The patient was on the table, the surgeon waiting was ready to begin. A message came that Simpson could not attend, was decided to operate without anaesthetics. The point the surgeon's knife had but touched the skin of the patient his body trembled, he gave one sigh and with that sigh spirit passed away. Had chloroform been administered all probability this patient would not have died: but supposing the end had been the same, one more would have been added unjustly to the present roll of deaths from chloroform and the whole subject of anaesthetics have been retarded many years. That many an unfortunate termination arises from a similar fear, however induced, that hurried the end of this patient, has been erroneously ascribed to the toxicological effects of chloroform, may be inferred from the fact that in many instances where death has occurred the apægetic admission has been made that not above a few drops had been given, a few whiffs inhaled ere the collapse occurred. A few whiffs—a mere relaxation of the power of active resistance, an abrogation of the function of the centre which controls the reasoning power, thereby intensifying apprehension or fear—the one thing above all others which we should strive to avoid prior to or during the administration of anæsthetic.*

That the one intrinsic danger attending the use of chloroform approaches through the respiration is a point which was held and taught by Simpson and Syme in the days of its fancy and still continues to be taught by the Edinburgh School of Surgeons, and by a strict attention to this axiom evil consequences may be avoided.

This contention has been disputed, but wherever it has been strictly attended to, good results have followed and its reliableness has been lately further established by a very important series of experiments on animals and observations on the human being by a number of responsible observers known as the Hyderabad Chloroform Commission.

In an address by Surgeon-Major E. Lawrie, Principal of the Hyderabad Medical School and a member of the Commission, he gives the result of 200 experiments on animals and personal observation of its effects on between 40 and

* Since reading the paper I have been informed by a dentist of a death which occurred in his chair while extracting two loose teeth. No anæsthetic being used.

0,000 human beings. The conclusion arrived at by this important Commission is clearly stated in a letter to the *Lancet*, of date May 11th, 1889, in answer to an article in that journal controverting the finding of the Commission, and upholding the theory taught by the English School.

Surgeon-Major Lawrie says:—"The *Lancet* would trust to the heart and circulation for signals of danger in chloroform administration. Our contention is that if the administration is ever pushed far enough to cause the heart to show signs of danger, the limits of safety have already been exceeded and a fatal result must inevitably ensue. So far from disregarding the heart as a factor in chloroform dangers, we say that any affection of the heart, either direct or indirect, is the one danger to avoid. But we say further that the respiration invariably gives warnings when a dangerous point is approached, and consequently that it is possible to avert all risk to the heart by devoting the entire attention to the respiration during chloroform administration."

In conclusion, gentlemen, I would say that no agent has been so well abused, so universally used, so misunderstood and hitherto so carelessly handled; and this being so, it is no wonder that so many untoward results have followed in its wake. There still remains the one great broad fact that an equally good and more reliable anæsthetic has been sought and not found. Many have been introduced and their advent proclaimed with jubilation. All have had their prognosticated powers and merits curtailed as experience proved their limitation. Each new general or local anæsthetic has been hailed as the champion which was to unseat chloroform from its throne; yet amid all the din of opposition it has not only held its own, but has gradually and steadily maintained its supremacy, and it remains to this day the one anæsthetic which best meets the varied requirements of *serious, delicate, intricate* or very *painful* operations, and which, notwithstanding the many charges, mostly unjust or exaggerated, which have been laid at its door, still remains supreme, the one most used by surgeons, the one most appreciated by the patient.

As evidence of its increasing use, as the methods of its administration and its effects become better understood and its purity is reliable, I need only mention that having occasion lately to be in the laboratory of Messrs. Duncan, Flockhart,

and Co., I inspected their new distilling apparatus devised and arranged by Dr. Inglis Clark, of that firm—an apparatus which, with mathematical precision, ensures the absolute purity of the drug. I was then informed that for every one hundred pounds of chloroform made by them in 1881, they now turn out one hundred and seventy-five—a broad incontrovertible fact, from which more reliable deductions can be made than from statistical tables, which give relative percentages, and which can, at best, be only drawn from varying and incomplete records.

“On Certain Anæsthetic Mixtures, with Special Reference to those in Use in Dental Surgery.”*

By FREDERIC HEWITT, M.A., M.D. Cantab.

GENTLEMEN,—When I was asked to read a paper before you on the subject of anæsthetic mixtures I felt that I should be quite unable, however laboriously I might work at the preparation of that paper, to repay my audience and the members of this Association for the honour which had been conferred upon me. My first impulse was to wade through all that had been written, and after having sifted out those portions of greatest value, to present them to you, supplemented by a few observations of my own. On second thoughts I came to the conclusion that however numerous the shortcomings of my paper might be, it would be better for me to give you the results of practical experience with certain of the known anæsthetic mixtures than to trespass upon your patience by a long discourse concerning the numerous combinations of anæsthetics which have from time to time been advocated and employed. I do not mean for one moment to depreciate the merits of those anæsthetic mixtures which I have not had the opportunity of testing and which I cannot refer to to-day; there may indeed be certain combinations of anæsthetic drugs which possess advantages which deserve wider recognition. Even if I had had practical experience of the thousand and one anæsthetic mixtures which have been suggested, I should not be able, in a communication like the present, to place before you any satisfactory conclusions with regard to the relative advantages of such a huge collection of narcotic agents. With your permission, therefore, I

* Read at the Annual General Meeting of the Association at Brighton, August, 1889.

shall almost entirely confine myself to the consideration of two mixtures which, from the point of view of the dental practitioner, deserve special notice. I refer to (1) the mixture of nitrous oxide and ether, and (2) the mixture of nitrous oxide and oxygen; and I shall in conclusion add a few words concerning an agent which, though rarely used in dental surgery, is a valuable anæsthetic, viz. the so-called "A.C.E." mixture.

Mixtures of Nitrous Oxide and Ether.

We are indebted to the late Mr. Clover for this valuable mixture, and I need hardly describe in detail its many advantages. The two anæsthetics may be given together, so that a small quantity of ether is added to the usual dose of nitrous oxide, or in such a manner that nitrous oxide is used merely as a convenient preliminary to deep etherisation. Although the administration of the two anæsthetics in combination is usually an easy matter, there are some patients with whom much difficulty may arise in passing from nitrous oxide anæsthesia to that of ether, and I shall refer to these difficulties later on. In dental practice many cases occur in which an anæsthesia of slightly longer duration than that obtainable from nitrous oxide is desirable, and it is in such cases that the addition of a small quantity of ether to the nitrous oxide is to be recommended. If the patient has not taken food for three hours, and if care be taken to prevent him from swallowing blood either during or after the performance of the operation, nausea and vomiting will not occur, save in very exceptional cases. Two or three years ago I conducted a large number of administrations at the Dental Hospital of London, allowing from three to ten inspirations of ether vapour towards the close of the administration of the gas, and I was much impressed at the almost invariable absence of nausea after this small dose of ether. The anæsthesia was appreciably prolonged in these cases; and I am convinced that if there is a probability of the operation lasting more than twenty-five or thirty seconds it is a good plan to add a "whiff" of ether, as it is often termed, to the nitrous oxide. There is no difficulty in administering a small quantity of ether after nitrous oxide, but we cannot always say quite as much as this concerning the transition from nitrous oxide narcosis to deep ether anæsthesia. Whatever means may be devised for the purpose, cases will occasionally occur in which difficulties manifest themselves, and it would be a good plan to attempt to define the causes of such difficulties, so that

should they occur we may be able to meet them. The method is a much more complicated one than would at first sight appear. Nitrous oxide be administered through a face-piece with adjustable working valves till the ordinary signs of nitrous oxide narcosis appear, and if ether vapour be now thrown into the air passages without any provision being made for the entrance of a small quantity of air, respiration cannot and will not pass. A little reflection will show the reason of this. The oxygen originally present in the air passages rapidly escapes with the nitrous oxide by the expiratory valve; the nitrous oxide cannot supply free oxygen; and ether vapour is equally incapable of doing so. It is, therefore, clear that if we wish to pass from deep nitrous oxide narcosis to deep etherisation air must be admitted, and it is upon the regulation of the quantity of air admitted that the success of the administration depends. I have, as I have elsewhere stated, that the temporary alteration in the rhythm of breathing towards the close of the administration of nitrous oxide is in reality due to an elevation of the larynx at the act of deglutition—an elevation which causes a mechanical hindrance to breathing by reason of the epiglottis meeting the superior aperture of the larynx. Now this alteration in the rhythm of breathing, accompanied as it is by a characteristic sound called stertor, is one of the phenomena due to the deprivation of air, as I shall subsequently emphasise when dealing with the administration of nitrous oxide and oxygen, and so long as air is withheld the nitrous oxide continued so long will the embarrassment to breathing persist. We all know how quickly the peculiar breathing of nitrous oxide narcosis subsides when the face-piece is removed, but if air be not admitted respiratory rhythm will not be restored. Hence in administering ether to a patient who is deeply under the influence of nitrous oxide, we shall not be able to maintain breathing unless we occasionally let in air in order to allow the temporary obstruction at the superior aperture of the larynx to subside. I mention this in some cases the admission of ether seems to set up an actual spasm of the sphincters of the larynx, more especially if the ether vapour be too strong for the patient. I am indebted to Mr. Bailey for the valuable practical hint that in full-blooded patients, whether the operation be a dental one or not, it is advisable to place a small mouth-gag between the teeth before commencing the operation in order to have free access to the mouth should it be necessary.

I would here point out that if nitrous oxide be given so that, after several expirations have been allowed to escape by the expiratory valve, to-and-fro breathing (as in the use of the "supplemental bag") be permitted, more oxygen remains in the air-passages than if the valves have been permitted to act throughout : and if ether be now admitted, breathing will proceed more freely and the vapour will be respired to a greater degree than under the conditions previously referred to.

Some administrators first place their patient under nitrous oxide and then rapidly change the nitrous oxide face-piece for an Ormsby's inhaler previously charged with ether ; and although the advocates of this plan urge that no air should be admitted during the change of face-pieces it is, I think, clear from what I have previously said that a small quantity must obtain admission or must be present in the air-passages when the ether apparatus is applied. After having tried all known methods of proceeding from nitrous oxide anæsthesia to ether narcosis I am inclined to think that the question of what kind of apparatus should be used is of small importance as compared to the principles which should be borne in mind in conducting the administration. The administration of nitrous oxide as a preliminary to deep etherisation should, I think, be conducted in the following manner :—1. Nitrous oxide should be at first administered so that the expirations escape from an expiratory valve. 2. Ether vapour should *gradually* be added to the nitrous oxide. 3. To-and-fro breathing of nitrous oxide and ether should next be permitted. 4. During the transition from nitrous oxide to ether *a small quantity of air must be admitted*—if too much be allowed recovery of consciousness will tend to ensue, if too little be given respiration will not proceed. 5. Ether should now be given in increasing quantities till deep anæsthesia becomes established.

Mixtures of Nitrous Oxide and Oxygen.

As an anæsthetic for very brief operations nitrous oxide is, as is well known, a most valuable agent ; but, like all other anæsthetics, it possesses certain disadvantages. Amongst these must be mentioned its power of establishing an asphyxial condition towards the close of its administration. I do not mean to say that the anæsthetic effect of the gas is the *result* of asphyxia—this is quite another matter ; but there is little room for doubt that many, if not most, of the later phenomena of nitrous oxide narcosis are referable

to asphyxia, *i.e.*, the deprivation of air, which has by experience been found to be necessary during the administration of the gas. If we do not adopt the precaution of excluding atmospheric air, the anaesthesia will be imperfectly established ; the more air admixed with the gas the less pronounced will be the anaesthesia and the more pronounced also will be the asphyxial phenomena. The connection of the asphyxial symptoms with the anaesthetic effects has led many persons to attribute the latter to the former ; but, as has been shown, quite erroneously. It is an unfortunate thing that it is not possible to obtain anaesthesia by giving nitrous oxide mixed with a sufficient quantity of air to prevent asphyxia. In order to obtain nitrous oxide may produce its full anaesthetic effect, it is necessary that a particular nitrous oxide tension in the blood should be reached, although it seems probable that this necessary tension varies in different subjects. Generally speaking it may be said that unless the lungs contain a very high percentage of nitrous oxide it will be impossible at the ordinary intra-thoracic pressure for the necessary tension in the blood to become established. The late Paul Bert believed that it was necessary to have 10 per cent. of nitrous oxide in the air cells in order to secure anaesthesia when giving the gas in the ordinary manner. For practical purposes we may accept this as a fact. Bert was anxious to abolish the asphyxial phenomena of nitrous oxide ; he ingeniously argued that supposing the ordinary atmospheric pressure to be doubled, it should be possible by administering a mixture of equal parts of nitrous oxide and air, to keep up the necessary nitrous oxide tension in the blood and so to secure anaesthesia, and at the same time to prevent asphyxia. He first of all made experiments upon the lower animals, and then upon oxygen instead of air. He placed an animal in a closed chamber in which the atmospheric pressure was raised one-fifth, and allowed the animal to breathe a mixture of five-sixths of nitrous oxide and one-sixth of oxygen. A very satisfactory form of anaesthesia resulted, and there were no asphyxial symptoms. Subsequently a large closed chamber was made and the foregoing principle was applied to practice. Time will not permit me to describe the chamber in detail. I need only say that all those concerned in the operation entered the chamber ; the atmospheric pressure was raised to the desired extent ; a mixture of nitrous oxide and oxygen was administered to the patient ; and the anaesthesia which resulted was as perfect as could be desired. The apparatus

costly and cumbrous that it soon fell into disuse, although I believe it is still occasionally employed.

Attempts to secure anæsthesia from mixtures of nitrous oxide and oxygen administered without employing a closed chamber have frequently been made both in this country and abroad, but hitherto without much success. At the present time the gases are administered together both in Germany and America; but I have found it difficult to obtain reliable accounts of the methods in use. In a recent number of the *Lancet* (April 27, 1889) I gave an account of the experiments which I have myself made and I need not now repeat what I there brought forward. During the course of these experiments I came to the following conclusions:

1. That the percentage of oxygen which answered best in most cases was 12·5.

2. That unless steps were taken to slightly force the mixed gases, as it were, into the lungs, imperfect anæsthesia and excitement were liable to arise.

3. That it was possible, with an accurately fitting face-piece and a well-jointed apparatus, to maintain an increased intra-thoracic pressure.

4. That if provision were made for maintaining an increased intra-thoracic pressure nearly every case became satisfactorily anæsthetised.

5. That by the administration of this mixture in the manner described all asphyxial symptoms were prevented and the anæsthetic effects of the nitrous oxide secured.

There is a marked contrast between the anæsthesia of nitrous oxide and oxygen and that of the former gas. With the mixture there is no change of colour of the features; respiration never becomes in any way embarrassed, indeed it is sometimes so calm that it hardly appears to be proceeding; the characteristic jactitation of nitrous oxide is conspicuous by its absence; the pulse is full, soft, regular, and only slightly accelerated; and in the vast majority of cases no noise or excitement occurs. With regard to the anæsthesia produced by the mixture I can only say that it is *usually* of a very satisfactory kind. Corneal reflex is generally not lost, and there is occasionally very slight reflex muscular spasm when the tooth is gripped by the forceps, but I find that patients have no recollection whatever of the performance of the operation, and feel no pain. I have myself inhaled the mixture on two occasions and have been surprised at the rapidity with which

I have lost consciousness, hearing, and sight. The oxygen mixture seemed to me to permit of my taking deeper draughts to speak, than when inhaling nitrous oxide alone; but the sensations during the first few moments of inhalation were very similar to those I have experienced when taking nitrous oxide. The maintenance of pressure during the administration is doubtless the cause of the rapid loss of consciousness. I was thoroughly anæsthetised by the mixture; for, with the exception of the first few seconds, not only did I feel no pain from the repeated plunging of a needle into my hand, but I had no knowledge of the injury being inflicted. I have given nitrous oxide with oxygen in over 250 cases up to the present time. In 100 of these I used various percentages of oxygen, and in 150 I used 12½ per cent. as above recommended. I am aware that a much larger experience will be necessary before drawing final conclusions with regard to the utility of the mixture, and I will therefore refrain from any statements with reference to the length of anæsthesia, &c. The period of inhalation which is necessary before removing the face-piece is longer than that required when using nitrous oxide alone—often two or three minutes as long. Anæsthesia is known to be present by one or more of the following signs:—The extremities are relaxed, the eyelids can be raised with the finger without inducing spasm, the eyeballs are vacantly fixed or present slight movements of oscillation, the patient does not open his eyes when requested to do so, and respiration is extremely calm. Sometimes slight rigidity of the extremities is present instead of relaxation. Clonic spasm sometimes takes place. The mixture is eminently fitted for respiration on account of its oxygen: indeed I see no great reason at present why it should not be inhaled for a prolonged period, and anæsthesia may be thus maintained for a lengthy operation. Experience is, however, necessary to decide this point.

At the conclusion of the preliminary report which I published in *The Lancet* I said that I could not definitely state that a patient would be thoroughly anæsthetised with the mixture administered as described; and I further mentioned that I was then endeavouring to contrive a portable apparatus for administering the mixture. Since that time I have had an apparatus made which I have brought here with me, and which, so far as I have gone, answers well. Just as there are some rare cases which are rebellious to nitrous oxide alone so I think there will

found cases which will not be thoroughly anæsthetised with the mixture ; but further experience is necessary to prove this. The apparatus which I now employ consists of a mackintosh gas-holder capable of containing about twelve gallons and connected by rubber tubing with iron cylinders for supplying the nitrous oxide and oxygen to the gas-holder ; it is also fitted with an exit tube and stopcocks for transmitting the mixed gases to the face-piece. The gas-holder when expanded is cylindrical in shape, with its axis vertical. It has a circular board at each end, the upper one rising and falling in accordance with the variations in the contents, the latter serving as a stand. In order to prevent swaying of the upper board there is a central vertical brass rod fitted to the lower board and passing through a packing box in the centre of the upper board ; this rod has eight divisions marked upon it, all of which are visible when the gas-holder is empty and the two boards are approximated. Weights can be placed on the upper board in order to cause the gases to issue under pressure. From the under surface of the lower board an exit pipe passes ; this is furnished with two stopcocks near one another ; and between the stopcocks are the inlet tubes from the iron bottles containing the two gases. The exit tube of the gas-holder passes to a bag and face-piece, the latter being furnished with inspiratory and expiratory valves. In order to charge the gas-holder the distal stopcock of the exit tube is turned off and the proximal stopcock turned on, thus permitting the nitrous oxide and oxygen to pass into the gas-holder. All gases having been pressed out of the gas-holder, one-eighth of oxygen is thrown into the latter, and seven-eighths of nitrous oxide are then added. The distal stopcock is now turned, and the mixture of nitrous oxide and oxygen ($87\frac{1}{2}$ per cent. of nitrous oxide and $12\frac{1}{2}$ per cent. of oxygen) admitted to the face-piece. I have found that a weight of about five pounds on the top of the gas-holder answer well ; as above explained, unless the gases are administered under pressure failure will result. I would here point out that in the event of the mixture failing to produce satisfactory anæsthesia the administrator can at any moment change to pure nitrous oxide by simply turning the proximal stopcock and throwing in nitrous oxide from the bottles direct to the bag and face-piece. By this plan every patient will be satisfactorily anæsthetised. I do not believe that the mixture will ever entirely supplant nitrous oxide as an anæsthetic in dental practice, but I venture

to think it possesses many advantages over the gas. I am myself thinking of employing it in preference to nitrous oxide if I find the apparatus sufficiently portable. I am convinced that it would be far better and safer to use the mixed gases for patients whose respiratory or cardiac functions are in any marked degree impaired by organic disease than to administer nitrous oxide alone and so throw a considerable though temporary stress upon the lungs or heart of such patients.

The "A.C.E." mixture.

There seems to be some doubt as to the originator of this mixture, which consists of one part of alcohol (.795), two of chloroform (1.497) and three of ether (.720). Many other mixtures might of course, be made with these three agents, but I shall confine myself to the consideration of this particular one, which I believe to be the best. I must, in the first place, briefly consider the objection which was urged by Snow against mechanical mixtures of anæsthetics, and this will lead us to inquire whether such an objection is sufficient to contra-indicate the use of the particular mixture under consideration.

Snow urged that as the constituents of an anæsthetic mixture evaporate at different rates, the temperature remaining constant, patients would at first necessarily receive the vapour of the anæsthetic most readily vapourised in a greater proportion than that in which the anæsthetic existed in the mixture; moreover, as the evaporation of the lighter constituent the heavier would remain and would then be breathed in a very different proportion to that intended. The objection thus advanced by Snow, would seem at first sight, to be a formidable one. If for example, a mixture be made of equal parts of ether and chloroform, and a considerable quantity of the mixture be poured upon a sponge towel and administered very much as ether was at one time administered, the patient will at first inhale a vapour which is very largely composed of ether, and will subsequently breathe a vapour very largely composed of chloroform. I am willing to admit this contention, but would submit that it is wrong to administer the mixture in the manner described. If instead of administering it as described, very small quantities of it at a time be sprinkled within a cone-shaped inhaler, the objection above cited will cease to exist. I would further submit that all mixtures containing more than an extremely small proportion of chloroform

should be administered as if they consisted of chloroform alone ; and, *cæteris paribus*, such mixtures must be safer than chloroform.

Anæsthetic mixtures have fallen into disrepute, because those who have advocated them have regarded them as stable and definite bodies. Taking the "A.C.E." mixture as an example, it should be, I think, regarded as *diluted chloroform*. The diluents used, viz., alcohol and ether, are cardiac stimulants, and hence particularly appropriate. If we regard the "A.C.E." mixture as a stable body, and having poured a considerable quantity of it into an inhaler, administer it as such, and expect to produce a special kind of anæsthesia with it, we shall fall into error, and Snow's objection will at once apply. But if the "A.C.E." mixture be administered as diluted chloroform, Snow's objection need not be considered. Having watched a large number of cases anæsthetised by the "A.C.E." mixture, I think there can be no doubt that the anæsthesia is due to chloroform ; and that the alcohol and ether chiefly, if not entirely, act as cardiac stimulants. A little reflection will, I think, tend to show that the quantity of ether in this mixture is insufficient to contribute to any marked extent to the anæsthesia. It is usually possible with an ounce or less of the mixture, administered in small quantities at a time by means of a simple felt cone and sponge, to produce a very satisfactory form of anæsthesia. Now, the mixture contains half its bulk of ether, and any one who has administered ether with a copious supply of air will at once agree that half an ounce of this anæsthetic so administered would go but a short way towards securing anæsthesia. Similarly, we may put the alcohol out of the question. We are in part, forced to regard the chloroform as the active ingredient. The pupil is usually contracted under the "A.C.E." mixture ; and with the exception that a little more mucus is produced, that the pulse is fuller, and that the respiration is a trifle deeper, no essential differences between the "A.C.E." narcosis and the chloroform narcosis exist. If we once admit this latter fact we should, I think, administer the mixture *as if it were chloroform*, adding to the inhaler a small quantity at a time, and above all, providing for a copious supply of air. If we employ a drop bottle and some kind of inhaler which allows plenty of air, we shall find a considerable difficulty in anæsthetising vigorous adults, less difficulty in anæsthetising weakly individuals, and less difficulty still in anæsthetising infants and young children. It is hazardous to hurriedly anæsthetise with the "A.C.E." mixture.

Hence it is best to commence with the drop bottle and simple form of cone ; should the patient, as is frequently the case, require more of the anæsthetic than can be given from a drop bottle, the cork of the latter may be removed and half a drachm occasionally added to the inhaler ; the administrator can subsequently return to the use of the drop bottle when once anæsthesia has become established. Given in this way and with the belief that we are employing diluted chloroform, I cannot see that the slightest objection can be raised against this mixture. I regard it indeed as a most valuable substitute for chloroform, and every chloroformist should, I think, have at hand this or a similar mixture for employment in certain cases.

Any remarks concerning the "A.C.E." mixture would be incomplete without reference to the cases in which that mixture is to be recommended. Very young children and persons above 65 years of age will be found to be satisfactorily anæsthetized by it. It is also of great value in many bronchial, pulmonary and pleural affections which would contra-indicate the employment of ether. It must be borne in mind, however, that in some advanced cases of this class chloroform or chloroform diluted with alcohol will be better tolerated than the "A.C.E." mixture. There are many cases of morbus cordis in which the "A.C.E." mixture answers admirably—*e.g.*, those in which ether is contra-indicated by reason of the pulmonary engorgement it produces, and those in which chloroform is inadvisable by reason of its tendency, if incautiously administered, to produce cardiac depression. Persons who are the subjects of extreme obesity will be found to tolerate the "A.C.E." mixture very well indeed, ether being usually badly borne by such persons. I may say in conclusion that one of our London chloroformists (Mr. Moss, of King's College Hospital) is in the habit of employing the "A.C.E." mixture as an anæsthetic for general purposes, and he speaks very highly of it. He tells me he has used it in about 10,000 cases.

Time will not permit me to say more. In concluding this communication I feel that what I have put before you very inadequately covers the ground. There are many more anæsthetic mixtures which deserve attention ; but these will, I trust, be fully considered on some subsequent occasion.

**On Recent Researches upon Nitrous Oxide Narcosis,
and their bearing upon the Practical Question
when and how should Laughing Gas be Adminis-
tered.***

By DUDLEY WILMOT BUXTON, M.D., B.S.Lond., M.R.C.P.Lond.

THE questions which practical men ask themselves in considering the value of an anæsthetic, are :

1. Is it efficient ?
2. Does its use entail danger to the patient ?

I take it we have severally been asked to read papers upon the various anæsthetic substances in order that some comparison may be made between these anæsthetics and some conclusions formulated upon their individual uses and dangers.

I propose to investigate how far Nitrous Oxide Gas is an efficient anæsthetic, what are the limits of its application, and, secondly, to indicate that it is within these limits a safe anæsthetic.

The audience I address to-day will probably be prepared to accept my last contention, as their experience will have proved to them the extreme rarity of any untoward symptoms occurring under "Gas," but I venture to think that it has only recently been competent for us to explain in a satisfactory manner why nitrous oxide is so safe, and why it is so effectual. Among my medical colleagues, with the exception of those who have gained a special knowledge of the matter, there is still a curious dread of nitrous oxide, and time after time have I been told that Dr. So-and-So considered Miss Blank "not strong enough to take gas." This arises from the fact that the average medical mind regards nitrous oxide narcosis as a modified form of asphyxia, and is prone to communicate this idea to the patient, who very properly translates asphyxia as being smothered or choked. A text book which we find in every student's hand describes, with charming assurance, the action of nitrous oxide as that of an asphyxiant, and recently a venerable and deeply-respected member of our profession, Dr. George Johnson, has promulgated similar views with the weight which his name must always lend to any statement.

* Read at the Annual General Meeting of the Association at Brighton, August, 1889.

But nitrous oxide is no asphyxiant, it possesses a specific action upon the organism which differs widely from what obtains when an indifferent gas is respired, while oxygen is withheld.

In the course of a prolonged research, the results of which I had the honour of communicating to the Odontological Society of Great Britain, the following facts were pretty clearly made out—

Nitrous oxide does not, to any appreciable extent, split up in the organism; hence its action, if any, must depend upon itself, or upon deprivation of oxygen.

We find by actual experiments that nitrous oxide produces gross changes in the organism.

Thus if the skull of a mammal be trephined and a sufficiently large window be made in the bone to expose an area of an inch or so across, one is able to watch the pulsation of the brain beneath the dura mater, to observe the colour of the membrane, &c. Under ordinary circumstances there exists, after trephining, a very distinct space between the bony calvarium and the dura mater, and rhythmic pulsations occur bearing a direct relation to the systole, or general arterial dilatation.

It is a simple matter, the muscular system being paralyzed by curare, to establish artificial respiration by means of bellows worked by a water power engine, to ensure a respiration of any rate and depth. Of course the normal rate of respiration during sleep is selected, and by the use of a three-way valve, air can be excluded, nitrous-oxide or other gas admitted, and at expiration the tidal air removed. With this apparatus the following results were arrived at. The brain as soon as nitrous oxide was admitted began to swell up, and although preserving its normal colour for some time, the hemispheres assumed a most remarkable appearance. Simulating a hernia cerebri they protruded into the trephine hole. The colour of the brain now changed from a bright vermilion to a lakey purple. The brain undulations changed in character, becoming less in frequency and amplitude. The volume of the brain increased and at length the movements ceased. The dura mater now was pearly and glistening with a bluish lustre, and upon examination of the vessels of the pia mater, the well-known appearance of con-

mencing stasis was seen. Upon resumption of air and shutting off of nitrous oxide, the phenomena above described were repeated, but in a reverse order. The brain undulations increased in frequency and amplitude, the fulness of the hemispheres gradually lessened, and the membranes resumed their ordinary colour and appearance.

Although we are not concerned especially in this connection with the *modus operandi* of the anæsthesia production by nitrous oxide, I will here answer a suggestion which was made some time since, viz., that the brain substance—which as I had then shown swelled considerably—might press upon the calvaria or bony walls, and so a species of compression be established. I, at the time, pointed out that whatever pressure existed was probably interstitial and not found without, but I further tested the question by removing the bony coverings of the hemispheres, and in spite of this obtained the full physiological effects of nitrous oxide.

We will now pass on to consider the spinal cord. Pursuing a similar method several laminæ were removed from the vertebral column and the spinal cord exposed; in some cases the theca being incised, in others being left in its entirety. Nitrous oxide was then administered and the following phenomena observed. The spinal cord, just as occurred with the brain, underwent an increase in size, which increase was very prettily evidenced by the overflow of cerebro-spinal fluid.

The difference anatomically between the brain and cord made the former an easier organ upon which to study the changes in the vascular membranes, but no more striking proof of the enlargement of the whole cord could be obtained than that afforded by the outflow of cerebro-spinal fluid which took place as soon as the animal came under the influence of the nitrous oxide.

But to establish the truth of the results thus arrived at it is necessary to obtain them under other and test conditions. Accordingly curare was not used in one series of experiments, while parallel series of experiments were devised in which mouth respiration in some and tracheal inhalation in others were employed. It also appeared necessary to grapple with two questions, viz. :—

1. Are the phenomena detailed above really due to nitrous

oxide? (2) or to de-oxygenation of the tissues—apnœa-term, as Dr. George Johnson suggests, more satisfactory than asphyxia?

To deal with the second question, control apnœal experiments were made.

In one series the trachea was tied, while in the other curarised animal was after a time left without artificially performed respiration, this being done to avoid the dyspnoic struggles, which by their very violence produce a rise in blood pressure and so give an illusory resemblance between the state of apnœa and nitrous oxide narcosis. For particulars of the experiments I would refer to my original papers, and will content myself here with stating conclusions.

Apnœa produces changes far more slowly than those occurring in nitrous oxide narcosis.

The brain and cord, although when much muscular struggling is permitted, undergoing some engorgement and becoming purple and almost black, do not swell up, but actually lessen in volume in apnœa.

The lessening in volume may, provided the apnœa has not been carried too far, be checked and even changed to a state of enlargement if nitrous oxide be administered.

Again, experiments (for details see papers quoted) show that besides causing anatomical alteration in the spinal cord and encephalic centres, nitrous oxide produces physiological phenomena with which we are familiar in certain conditions of the cerebro-spinal axis, viz.: a loss of certain reflexes, namely, the superficial, such as the skin, and conjunctival persistence of the patella reflex, sometimes its exaltation, development of ankle-clonus, the occasional development of clonic and tonic contractions, opisthotonos, emprosthotonos, pleurosthotonos, and occasional transient paresis and hemiparesis—all symptoms of extreme significance and interest. About the cardiac and vaso-motorial systems we have very important facts to consider.

Regarding nitrous oxide as an asphyxiant, it has been customary to caution persons with weak hearts against its use, and indeed were it a member of that class it would be most detrimental in nearly every form of heart and pulmonary disease.

Having shown that nitrous oxide acts as such we will go

the effects it has upon the heart force and rhythm, and blood pressure.

There are several *ways of showing the heart's action*: placing the *hand upon the chest, removing the chest wall and watching the viscus* in its pericardium, taking *cardiographic tracings*, and the less satisfactory method of recording the pulse at the wrist or elsewhere, either by the use of a sphygmograph or simply trusting to the finger. The first methods are preferable, but any, if carried out carefully, show that the heart is but little affected by nitrous oxide.

If an animal is made to inhale until the respirations grow slower and slower and finally cease, the heart will be found to beat steadily on in marked contrast to its laboured tumultuous action during the condition of apnœa.

The sphygmograms which are shown and which are passed round show the following changes in the pulse.

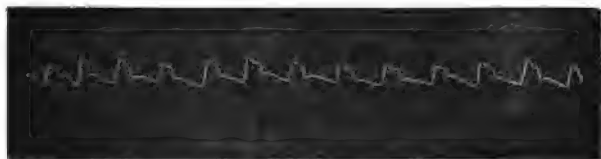


FIG. 1. — Normal Pulse.

The normal pulse trace consists of the initial rise, as the tidal wave distends the artery, and the gradual descent, as the tidal wave passes onwards, which descent is marked by secondary waves, partly those due to oscillation and partly due to reflux of blood, driven back by the obstruction caused by the capillaries.



FIG. 2. — Fully under nitrous oxide; shows no tidal wave; marked dicrotism, evidencing lowering of arterial tension.

There appears to be a lessened tension evidencing a lessened tidal wave, this lessened tension being shown by the greater acuteness of the initial curve, the dicrotic wave

being placed lower down the curve, and the dicrotism increased, while to the finger the lift is perceptibly diminished.



FIG. 3.—Shows gradual resumption of normal characters during "coming out."

These results are most important, and are at variance with much that has been published elsewhere—material bearing on this subject is very meagre.



FIG. 4.—Continuation of 3; tidal wave appearing.

upon the very unreliable foundation of experiments conducted upon hospital patients, all more or less under the tyranny of fear or terror.



FIG. 5.—Normal trace.

The rhythm of the heart, at first accelerated, usually turns to its normal rate during narcosis, or drops a few beats.



FIG. 6.—Under—shows loss of tidal wave; pointing of apex; respiratory curves exaggerated; shows lowered tension.

The blood pressure under nitrous oxide must next be considered.

For the first period but little change occurs; later on there is a gradual fall in blood pressure, a fall which, although oc-



FIG. 7.—Still under, beginning to come to.

curing throughout the whole body, is most marked in the splanchnic areas, as is evidenced by the kidney curve shown in the diagram.

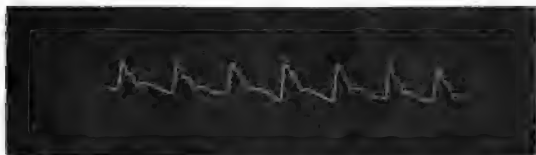


FIG. 8.—Resumption of normal beat.

Upon the animals breathing air again, a short gradual recovery of blood pressure took place.

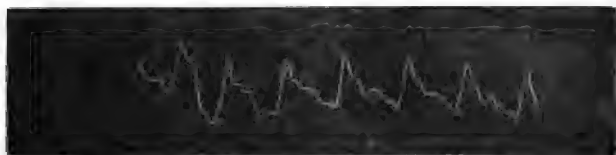


FIG. 9.—Normal beat, shows tidal wave, aortic notch, dicrotic wave.

Control experiments made upon curarised animals showed that when they were rendered apnoeic, blood pressure at once

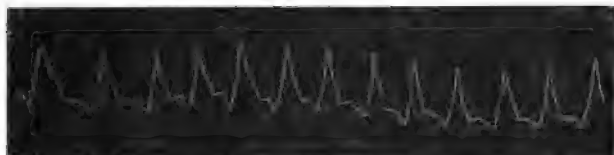


FIG. 10.—Under nitrous oxide. Shows acceleration of heart beats; increased acuteness of curve; diminution of tidal wave; dicrotic wave occurs later, this is shown by being farther from apex.

rose and became extremely high, while the heart's beats became weaker and weaker *pari passu* with increased blood pressure.

Upon respiration nitrous oxide acts as follows:—

The respirations grow slower and at first fuller; as na progresses they become still more retarded, but less full



FIG. 11.—Nearly same as 2, but features more marked.

at length they cease. At this point the heart still beats if a gentle pressure be made upon the thoracic par respirations are resumed, and provided access of a allowed to continue, consciousness is regained.

This is wholly different from the wild convulsions inc upon a corresponding period of apnœa and strongly sug to the mind that the cessation of respiration under ni oxide is due to a sedative action exerted upon the med centres. Having now reviewed at what, I trust, you wi regard as an undue length the subject of the action of ni oxide, I will, with your permission, point out the pra deductions we are justified in making, firstly, conce heart and vascular diseases.

The heart may be hampered by organic disease functional disease; by mechanical displacement. L ask ourselves how far nitrous oxide is contra-indicat organic heart disease. Broadly, we may consider the n under two heads.

(1) When the heart muscle is diseased.

(2) When the valves are diseased, although as w all fully aware, the conditions are only too often coincide the one individual. The heart muscle may be enlarg hypertrophied—with vigorous heaving impulse and disp ment of the apex beat, and we know that such a is doing hard work against an obstruction existent : where in the circulation. Such a heart might exi granular disease of the kidneys, in which the arterie pose a severe impediment to circulation. But with the growth of muscle we usually have some thinning of the of the heart—dilatation. So long as the heart muscle i

able to overcome the impediment the patient is, from our point of view, all right; when this compensation fails the heart overworks, or it is incompetent to properly propel blood through the arteries, its own muscle becomes badly

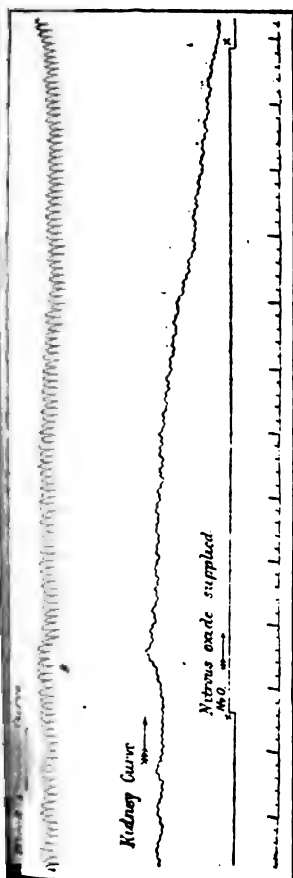


FIG. 12.

The upper line shows the blood pressure trace taken from carotid.
The second line is taken from the left kidney enclosed in an oncometer and shows the variations of blood pressure in the kidney.
The third line shows the duration of the experiment. N^2O being inhaled from the mark x to the other mark x .
The bottom line is the time marker.
The tracings are to be read from left to right.— $\frac{1}{2}$ size.

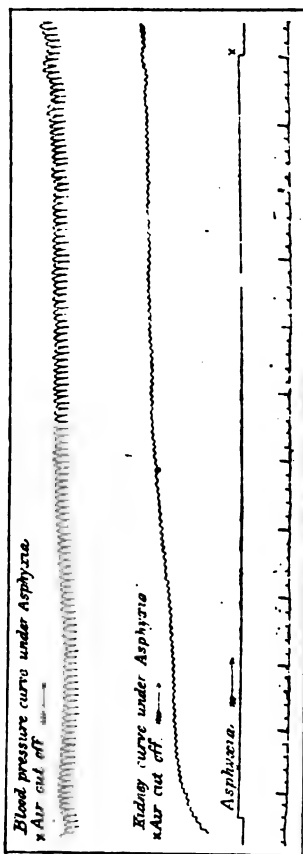


FIG. 13.

The upper line shows carotid blood pressure during a period of asphyxia.
The second line shows blood pressure, &c., in the kidney enclosed in an oncometer.
The third line marks (between x , x , x) the duration of the experiment, and the bottom line is the time marking record.
The tracings are to be read from left to right.— $\frac{1}{2}$ size.

nourished and so gives, dilatation being the result. A person having such a heart takes nitrous oxide and as a result his heart's beats are but slightly accelerated, the blood tension is slightly lowered, while the medullary centres are subjected to the influence of a sedative. If, however, as Dr. George

Johnson and others assert, I submit, erroneously, that nitrous oxide acts as an asphyxiant, we should have an engorgement of the pulmonary vessels and as a consequence a congested heart and a patient in urgent danger. To those who, like myself, regard nitrous oxide as a sedative, and a valuable one, there is no fear of pulmonary engorgement, and, provided struggling and holding of the breath does not occur, the pulmonary circulation goes on with perfect regularity during the administration.

But another form of disease of the heart muscle has to be considered, and one which supervenes upon the conditions above cited, when compensation failing, the nutrition of the heart also fails. The myocardium will in very many varieties of disease undergo fatty and other forms of degeneration. The muscular fibres growing fat laden and feeble are usually the one bent link in a condemned chain, and not only is the heart incapable of doing its duty but the nerve ganglia and centres are prone to shirk work and so syncope is ever imminent. There is even in such cases no reason why syncope should be determined by nitrous oxide, and there is certainly no greater fear of it than from its incidence from shock. I am speaking broadly and from the point of view of the possible action of nitrous oxide. In any very enfeebled individual clinical experience would decide one in estimating the danger of the anæsthetic. My own experience has been that the cases of syncope one meets with are usually associated with old fatty hearts, but occur in persons in whom anæmia is present; the tissues, while demanding much, are feeble; and in those whose nervous system is more or less enfeebled.

Of valvular heart lesions we must consider mitral and aortic obstruction, and mitral and aortic incompetence.

Here again were nitrous oxide an asphyxiant we might have ought to refuse the solace of gas to patients whose hearts were sufficiently diseased to cause symptoms, but as it is not an asphyxiant I have in ordinary cases seen no symptoms at least suggestive of heart failure consequent upon an additional strain. We know that syncope is a frequent and a dangerous symptom of advanced valvular trouble, and upon the frequency or infrequency of these attacks I should decide whether or not to administer gas. There is not any preparation of gas which would determine syncope in valvular disease.

The group of cases falling under the heading of functional heart disease are far more dangerous. Such cases are those in which the heart's action is weak, feeble, irregular, and of poor tone, the anæmic persons worn out by prolonged disease or debauch, persons of ill-nourished nervous system, who for want of better names are called hysterics—male and female—hystero-epileptics, the gouty and dyspeptic; those whose failing heart has ever been “assisted” along the downward path by nips of alcohol, *et hoc genus omne*. These persons have nervous systems which will take large quantities of sedatives without much effect; they are timorous, peculiarly liable to fear reflexes, and nitrous oxide has but a transitory effect on their cerebro-spinal axis, and not infrequently baulks us by its apparent failure. Another reason why nitrous oxide is often so unsatisfactory in these cases is that there is commonly a lack of due oxygenation of the tissues in these persons, and so when the full dose of nitrous oxide gas is administered there is a concurrent impoverishment of oxygen which induces an amount of apnoea such as should be absent when gas is properly given.

In our third class of cases we must group displacement of the heart by *pericardial adhesions*, by *pleuritic effusions*, *ascites*, *abdominal or other tumours*. Nitrous oxide gas, from the fixation of the thorax, which the tonic spasm of the muscles may bring about, if that agent is pushed far, would be contra-indicated, and it would be wise, while commencing with nitrous oxide, to continue with ether.

The slight influence which nitrous oxide exerts upon the respiratory system renders detailed notice unnecessary. I have never, in my experience, found nitrous oxide, when pure, act as an irritant, and as I have endeavoured to show this bland gas does not impede the pulmonary circulation, there is no ordinary intra-pleural or intra-pulmonary condition which should, in my experience, contra-indicate its use.

How far do conditions due to disease of the central nervous system contra-indicate nitrous oxide?

I can find no record, either in the experience of others or of myself, to show that any organic or functional lesion of the cerebral hemispheres, or spinal cord interfere with administration of nitrous oxide. One would expect from the very marked changes in the vaso-motor areas of the brain and cord which

occur under that anæsthetic that whatever condition brought about by vaso-motor perturbations would be acted by nitrous oxide, and I believe that this is so in degree. *Epileptics* and *hysterical* persons are often *depressed* by it, and I have many times been struck by the curious condition which supervenes upon its administration to persons afflicted with *mania*. You are also aware of the Savage who, during his control of Bethlehem Hospital, enjoyed an almost unique opportunity of studying the effects of anæsthetics upon the insane, found that in persons who had once been mad nitrous oxide, ether or chloroform would in a small percentage of cases give rise to an outbreak—usually transitory.

In the following case, for the notes of which I am indebted to the kindness of Dr. Coleman, formerly of the Queen's Square Hospital for Paralysis, there is a record of an instance in which a temporary attack of insanity followed frequent use of nitrous oxide.

Lydia Askew, twenty-six. Married. No neurotic history could be traced. No previous illnesses. Admitted under Dr. Bastian suffering from diphtheritic paralysis. When crescent, nitrous oxide was administered to facilitate the extraction of some carious teeth. The extraction proved difficult, and she was kept, more or less, under the influence of the gas for *about twenty minutes*. Although the apparatus was in good order, and she took a large quantity readily, it was found most difficult to get her completely under the influence. She afterwards proved that she had heard remarks although she felt but little pain. During the rest of the day she was merely rather stupid.

Next morning she thought she was in a "hospital ship" and complained of the motion. Made incoherent remarks and asked a definite question. In the afternoon suddenly became more rational, conversed intelligently, but had a weak expression.

During the next *four days*, in the beginning of the morning and late in the evening she relapsed into the previous condition, not knowing where she was and talking nonsense. During the rest of the time she was sensible, but much depressed. On the evening of the *fifth day*, after the administration, she suddenly jumped out of bed, saying she was going to drown herself. She had delusions that her children were dead.

She was discharged on the *sixth* day, in the care of her friends, and taken to the country. About a *fortnight* later she was reported to be as well as ever.

That a small minority of persons suffer from severe headache, temporary nervous paresis after gas, I can well believe, although one is apt to accept the accounts of such cases with a grain of salt. If they exist, they are very rare.

The question has arisen how far are persons with diseased arteries in danger from the increased intra-cranial pressure of nitrous oxide narcosis? Would, for example, a patient who suffered from miliary aneurism of the basal vessels incur a grave risk? The risk certainly exists, but is certainly less than that entailed by the shock of operation without gas, and may, I believe, be incurred in the interests of the patient. Mr. Browne-Mason's interesting case which appeared in the "Transactions of the Odontological Society," is especially noticeable in this connection. I have given gas to hemi- and paraplegics, to cases in which cerebral or cerebellar tumours were present, but in none of these cases have untoward, or even peculiar symptoms arisen.

In conclusion, what practical lessons have these researches taught us as to methods of administration?

The one lesson of all others is, administer nitrous oxide pure and simple. If you adopt any means which causes your patient to re-breathe exhaled air, you are doing him harm and yourself discredit. All my preceding remarks refer to nitrous oxide narcosis, and not the mixed narcosis of that agent and suffocation. Those who prefer "suffocative narcosis" must please not to lay the flattering unction to their souls that its employment is free from danger. The one great mistake that most observers have made, and which Dr. George Johnson has recently rehabilitated, is to confound nitrous oxide narcosis with asphyxia, arguing from the mixed narcosis of suffocation and nitrous oxide to the safe anæsthesia of pure gas. The experiments upon which Dr. Johnson's arguments are based are suffocation experiments, and so far as nitrous oxide narcosis is concerned his arguments are invalidated.

I need not detain you long by dwelling upon the merits of nitrous oxide as an anæsthetic; its range of utility will be sufficiently indicated in the remarks I have made when re-

ferring to the diseased conditions of the body in which with comparative safety, be employed. Chloroform, whether be its merits—and they are many—cannot be used as gas, nor can precautions as to posture, after effects, on, be neglected, as we rightly neglect them in giving nitrous oxide. Ether from its offensive flavour, its after effects, its too violent action upon the blood pressure cannot be used in the hundred and one cases in which nitrous oxide is itself our friend.

Its one drawback is, so I am told, the briefness of anæsthesia it ensures. But I am not at all sure whether and I speak under correction—this is not one of its merits, as it prevents extensive laceration of the fifth of nerves in multiple extraction, which in very many cases I am sure, not free from danger. But this is not my department, not is it my business to enquire by what means mixed narcosis, we are enabled to prolong anæsthesia sufficient length of time for lengthy dental operations. I say, however, that as a rule nitrous oxide alone cannot be manipulated to ensure a most satisfactory period of anæsthesia, and that I fear there is often too great a tendency to distrust gas alone and to have resort to some form of narcosis, when such is really unnecessary.

The Title of Dentist.*

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THE essence of the Dentists Act, 1878, is to render possible the assumption of the title "dentist" by anyone who has not obtained the necessary qualification from one of the licensing bodies, thus to ensure that the public can, by referring to the Dental Register, easily ascertain who are the legitimate dental practitioners.

The curriculum laid down for the dentist by the Irish Council, which is substantially the same as, but slightly more stringent than, that of London, of Edinburgh or Glasgow, may be fairly explained as follows (I think I am indebted to Dr. Eliot, President of Harvard, for the illustration):

* Read at the Annual Meeting of the Irish Branch, 1889.

Take the letter Y. Suppose the stem to be three times as long as each branch of the fork. Well, the dental and medical student go hand in hand for the stalk of the Y; for the last year they separate, adopting each that course of study which the different surgical corporations have considered best suited to their requirements.

The course of study pursued by the dental student during this last year is, though different from, of quite as liberal a quality as that pursued by the medical student; and if, at the end of his studies, the medical student is assumed to have received a broad and liberal education from the requirements of the medical curriculum, this may with equal truth be predicated of the dental student, and each alike has an equal right to assume the position and dignity of an educated gentleman.

True, the qualified surgeon is quite within his right in saying that the dentist thus qualified is not invested with sufficient surgical knowledge to practise general surgery. The qualified surgeon could, however, say the same of, say a Bachelor of Arts of one of the universities; but this, neither in the one case nor in the other, implies on the part of the surgeon the assumption that either the dentist or the Bachelor of Arts has less claim than himself to be considered an educated gentleman.

And the dentist, qualified, as is now required, by Act of Parliament, is quite within his right in saying that the surgeon qualified according to the existing curriculum of the various licensing bodies, is not invested with sufficient dental knowledge to practise dentistry. The qualified dentist could say this also of the Bachelor of Arts, nor would this imply, on the part of the dentist, the assumption that either the surgeon or the Bachelor of Arts has less claim than himself to be considered an educated gentleman.

It must, however, be borne in mind that this status among the liberal professions only became the heritage of the dentist since the passing of the Dentists Act in 1878. Before that date there was no law to prevent anyone from assuming the title of dentist, and thus it happened that up till that date a large number of those who assumed the title were entirely illiterate.

The Dentists Act, 1878, paid a most tender regard to vested interests, but this is a condition inseparable from all such Acts of Parliament. We can find an exact parallel for it in the Medical Act of 1858, and after all it is an evil which with each year, as the dental profession is recruited from the well-educated, is sensibly diminishing.

In fact, when we contrast the Dentists Act with the Act, we find one all-important advantage in the former that there is one title, viz., that of "dentist," short, and unambiguous, which can be assumed by no one unless under the Act, while, in the Medical Act, there is no one title which can be assumed by medical men alone; for it has since been determined by the tribunals of the law, that the title of "doctor" can be assumed with impunity by anyone.

On all, then, who are anxious to support and uphold the Dentists Act—and it is only to these that the present Act is addressed—the duty is devolved, in the interest of the public and in the interest of the dental profession, to make clear, and as well understood as possible, who are those who have a right to the title "dentist."

Before 1878, the meaning of the term "dentist" differed greatly from the present meaning of that term.

In the earlier period it might be described as a "title" from its derivation, may be supposed to imply some special knowledge of the treatment of the teeth, which, however, was not assumed by anyone, and is frequently assumed by those who have no such special knowledge."

It may be readily supposed that the better qualified dental practitioners of this earlier epoch were not willing to assume a title of opprobrium which could be held by tinkers, blacksmiths, &c.; and it is not unnatural that this early dislike to the title may be so engrained in some of the practitioners, that even the altered circumstances brought about by the Dentists Act cannot overcome this deeply-rooted feeling.

For under these altered circumstances the meaning of the title dentist has become entirely changed, and may now be assumed as a "title, which not only by its derivation, but by its use as a guard of a Government Register, is limited to those who have passed through a long and liberal course of professional study, and are thus specially fitted to treat all diseases of the teeth."

Limited thus, it is no longer a term of opprobrium, but has become a title as honourable to him who is entitled to it as any other title which designates any other liberal profession.

When the position of the medical practitioners of the present day is contrasted with that of the medical practitioners of five or forty years ago, it must be admitted that the position of the dental profession has advanced enormously in public estimation.

that the medical profession is now regarded to be in the main composed of enlightened and liberally educated members.

And just the same revolution and change and advance in public estimation is now going on in the case of the dentist. This tendency can and ought to be aided by the co-operation of the dentists themselves, who should make it as clear as possible to the public who are the legitimate dentists, and what the position they can fairly claim among the liberal professions.

The assumption of the title of doctor or surgeon by any considerable number of dentists is calculated to diminish the value of the term "dentist" in general estimation. Those dentists who can legitimately call themselves doctors or surgeons ought rather to assume that title by which they earn their bread. If they are not ready to come forward and declare that here is a title of which no reputable practitioner should be ashamed, if they are not ready to nail their colours to the mast in the cause of this young profession, how can they expect that the public at large will soon learn to appreciate at its just value the title of dentist? Surely it is a time when individual practitioners might be ready to give up trying to "boss it" over their neighbours and throw in their lot and use their influence to promote the elevation of the term dentist in public appreciation.

Further, the title "doctor," as has been already set forth in this paper, even though assumed by a person registered as a medical practitioner and perfectly entitled to it, does not of itself imply that the person using it is a dentist at all. The public should be encouraged, when a person assumes the title of doctor, to ask the practitioner "Are you a dentist?" The practitioner may be able to answer in the affirmative, but there are a large number of quacks practising dentistry who would be unable, except at the risk of heavy pecuniary fine, to reply in the affirmative to the query, "Are you a dentist?" who could not claim to be dentists, but who can assume the title of doctor with impunity, and who thrive only because the public mind is in a fog on this very question. All legitimate dentists who drop the title dentist and adopt that of doctor are aiding this class of quacks, are assisting to keep the public in doubt, and are delaying the time which will surely come when this mist will be dissolved without their aid—nay, in spite of their hindrance.

It would be easy, if space permitted, to adduce further cogent reasons for discouraging the use by the legitimate dentist of the

title "doctor." But it is said: "The oculist, the gynaecologist, the orthopaedist, &c., do not think of coupling these titles with their names. The case of the dentist is a parallel one, why should he couple with his name the title dentist?"

The force of this argument depends upon the admission of the second premise, to wit, that the case of the dentist is a parallel one; but the case is not parallel. These specialists with their specialising titles must be registered under the Medical Act, but they have no register for themselves alone; the public has no anxiety to have a special register in which these specialists alone, apart from the general medical profession, can be registered, and, if it has felt such an anxiety has at all events not embodied it in an Act of Parliament.

Now, the converse of all this is the case of the dentist. The public has declared by an Act of Parliament that there shall be a register kept, into which alone dentists, qualified as here specified, can find admission, which is quite apart from the Medical Register, which does not imply that the dentist registered under the Medical Act, and into which the doctor registered under the Medical Act cannot find admission until he has augmented his general medical knowledge by a special course extending over a period of from one and a-half to two years.

Now, if it be admitted that it is advisable, in order to carry out the Dentists Act, that all legitimate dental practitioners should assume the title of dentist, it will be of some importance to consider how this title is to be coupled with the name of the practitioner.

Shall he style himself surgeon dentist, dental surgeon, or dental practitioner?

This may be a minor matter, but to those who wish for a title apart from flourishes, the short unambiguous title "dentist" will commend itself. This title will signify that the holder of the title practises both the operative and mechanical branches of the profession, and it has a healthy independence about it. It would seem to be a necessary preliminary to the growth of mutual respect between the doctor and the dentist.

How shall this title dentist be coupled with the name of the practitioner? In the epoch before the passing of the Dentists Act, before, in fact, dentistry became a recognised profession, a large number of reputable practitioners, considering this title no means a creditable one, refused to use the term dentist, and those who did use it appended it to their names.

It is certainly not customary to have on one's hall door such an inscription as Mr. Smith, surgeon. There is a feeling that such an inscription classes the surgeon with, say a jeweller or a tailor. On the other hand, a large number of surgeons prefix the title surgeon to their names; at least this is very common among surgeons of high rank in Dublin.

Now to prefix the title dentist to one's name is a new departure. Undeniably it is. The circumstances that call for the change are new; the whole object of this paper has been to discuss what is best to be done under the altered circumstances produced by the Dentists Act.

Dentistry is a branch of the healing art, the Dentists Act is framed on the plan of the Medical Act, and if on these grounds we are to form a judgment of the method of coupling the title "dentist" with the name of practitioners, we should say Dentist Jones, Dentist Smith, just as we would say Doctor Jones, Surgeon Smith, &c.

In the foregoing pages hurriedly put together it has been desired to establish the following propositions:—

1. That under the altered conditions introduced by Dentists Act the title "Dentist" should be understood by the public to imply that its possessor belongs to a liberal profession.

2. That such being the meaning of the term there should be no hesitation in assuming it as a professional title on the ground of losing caste.

3. That it is undesirable that legitimate dentists should assume the title of doctor or surgeon, since this is liable to retard the public estimation of the title "dentist," and also is calculated to aid a certain class of quacks.

4. That, all circumstances considered, the best method of coupling the title with that of the practitioner is to *prefix* the title dentist to the practitioner's name.

5. That this course is calculated to promote mutual esteem between the members of the medical and dental professions.

APPOINTMENTS.

Mr. EDGAR A. H. FIELD, L.D.S.Eng., has been appointed House Surgeon to the National Dental Hospital.

CHARLES E. PECKOVER, L.D.S.Eng., has been appointed Hon. Dental Surgeon to the Brighton, Hove and Preston Dental Hospital.

The Borderland of Medicine and Dentistry.*

BY C. T. VACHELL, M.D.Lond.

MR. PRESIDENT AND GENTLEMEN,—When your local Secretary did me the honour of inviting me as a member of the Medical Profession practising in Cardiff to attend at your Annual Meeting and read a short paper, it did not at once occur to me that there was any subject with which I was conversant which was at the same time likely to interest you.

On further reflection, however, it struck me that, although far as operative treatment is concerned it may be possible to draw a hard and fast line between us, yet nevertheless there are questions of some considerable importance which seem to lie within the range of the one or the other, matters on which it appears to be no one's business to advise. As a consequence much preventable damage may result to the teeth, and go to the health of the individual.

It may therefore be profitable for us to confer together respecting this borderland of the two professions for a few moments and endeavour to ascertain whether it may not be possible to arrive at some useful conclusions.

There can, I take it, be but one opinion as to the desirability of preserving the teeth in a sound condition as far on into life as possible; the pleasures and comfort of life at least are largely dependent upon the possession of sound teeth; and although some recently collected statistics to which I shall presently refer would seem to indicate that this condition is not essential for the attainment of extreme old age, or even for the maintenance of robust health, yet in a large number, if not the vast majority of cases, early loss of teeth implies as an inevitable result the impairment of the digestion, for the reason that of necessity the food is not properly prepared for reception into the stomach.

The greatest advances which the science of medicine has made of late years have been in the direction of preventive treatment or the study of the causes of disease; already many diseases have in consequence vanished from amongst us, and others bid fair to follow. Such scourges, for instance, as the plague, the black sickness and jail fever, are almost gone with the discovery of their causes, and typhus, typhoid and even small-pox and hydrophobia are giving way to preventive measures.

* Read at the Annual Meeting of the Western Counties Branch of the British Dental Association, Cardiff, July 26th, 1889.

So, too with diseases of the teeth ; once the teeth are actually attacked with disease it becomes a question of making the best of a bad job ; what is wanted is if possible to devise means whereby the teeth may longer be preserved in a healthy condition. In a perfectly sound and healthy constitution this is probably not a matter of supreme difficulty. Given that ordinary precautions are observed as to proper cleansing, &c., then the teeth should last sound until that period of life has been reached when activity is ceasing, and when in consequence it no longer is necessary to supply the system with large quantities of solid food. It is during the most active period of life that the teeth are most required, whether this be mental or physical, and this over, then when life is reduced to little more than existence it seems to matter little if the teeth are preserved or no, for a simpler diet suffices to supply that reduced amount of nourishment which is required. So much, then, for perfectly sound constitutions, but sad to say these cases are only too few, and rarely come under our notice ; we have rather to do with unsound constitutions, and in these the teeth are attacked by many enemies, and it becomes our duty to combat these as best we may, and so to protect the individual as long as possible from the ills that threaten him.

Civilisation, by preserving the weakly specimens of humanity, obviously tends to increase the tendency to diseases of the teeth ; so, too, the inhabitants of great cities by overcrowding, unhealthy occupations, and exposure to bad sanitary conditions generally are enfeebled thereby and rendered liable to various diseases which affect the healthy condition of the teeth.

In this direction much has been, and has got to be done, but these are great and general questions which are so obvious as not specially to need pointing out in these days ; at least, my present purpose is directed to a smaller branch of the preventive treatment of dental diseases.

I wish to enquire how far diet, habits and certain medicines contribute to the premature destruction of teeth, and if time permits I should like to say a few words about the teeth in *old* age.

We are all of course aware that struma, syphilis, diabetes and other constitutional diseases have direct, serious and sometimes peculiar effect upon the teeth, and the subjects of such conditions must early experience evil effects from the impairment of digestion due to the faulty condition of the teeth ; but over

and above these there is a large class of individual neither robust nor yet afflicted by any specific co disease, the general state is somewhat below that health; in fact, there is more or less debility present in a robust individual would do no harm might in produce much more mischief, for the reason that are weaker and less able to resist unfavourable If certain articles of diet and medicines, &c., are pro harmful to teeth, then this fact cannot too strongly be on physicians, for it must of necessity happen that they more likely to be placed in a position to advise on su than the dental surgeon. I confess for my own part rarely happens that one thinks of giving advice affecting and you will be doing much good if at these your annu you continue to make a point of asking us to join in yo tions, and thus causing us more and more to turn our t this direction. I propose to discuss the matter under of diet, habits and medicines, and the effect of acute il

Of articles of diet the most important by far as af teeth is sugar. That even sound teeth are injured b of sugar will hardly be disputed, and most people witness to the pain caused by sugar when it comes with carious teeth.

I have referred for information on this subject to t journals and find the following:—

Medical Times, 1857, vol. i., p. 230.—M. Larez, as of his investigations on the action of sugar on teeth, fo Refined sugar (cane or beet) is injurious to healthy t by immediate contact or by gases developed in the (2) A tooth macerated in a saturated solution of sugar altered that it becomes gelatinous and its enamel opa and easily broken. (3) This combination not due t but to a tendency of sugar to combine with the calcar of the tooth.

Lancet, 1845, vol. ii.; p. 211.—M. Larrey's researches (1) Refined sugar more prejudicial from its direct a from evolution of gases in stomach. (2) Teeth ma cerated in a saturated solution of sugar so as to be gelatinous character. (3) Erosion depends not on an on the affinity of the sugar for the calcareous matter. enamel less attacked than the osseous part of teeth,

because it (the enamel) contains fluoride of calcium, which is very resistant to chemical action.

[The Editor of *Lancet* objects to last conclusion as only a trace of the fluoride, and thinks that the difference in texture has more to do with it.]

British and Foreign Medico-Chirurgical Review, 1863, vol. ii., p. 466.—Dr. Paolo Mantegazza (Pavia): Weak easily fermentable solutions of sugar act upon teeth in a destructive sense more rapidly than its stronger solutions, which are not equally liable to fermentive change. Solution of *lactic acid* acts upon teeth in direct proportion to the quantity of acid employed; its disintegrating power is greater than lemon juice or ordinary vinegar. (Whether the amount of sulphuric acid added to vinegar in this country would vary the result is a question still open to enquiry.) Mantegazza has arrived at following conclusions:—(1) Sugar has no chemical action on teeth by which they are injured or subjected to decay. (2) Sugar may affect the enamel as any other hard body would, but for this to occur to any extent it would be necessary to be continually masticating loaf sugar. (3) Sugar only detrimental when in a state of lactic or acetous fermentation. (4) Concentrated and dilute lactic acid, vinegar and lemon juice injure the enamel. Possibly the better class of teeth able to resist this action. (5) Vegetable acids do not occur in sufficient amount in normal diets to injure healthy teeth. Persons with carious teeth, or who feel a sense of painful constriction on taking acids, should refrain from them. (6) A too acid secretion of the mucus of the mouth is the commonest cause of injury. This is why alkaline dentifrices are useful. (7) Possibly abuse of sugar and sweets may increase the acidity of secretions in the mouth. This remains to be proved.

Taking it, then, as proved that sugar does injure the teeth, and more especially those that are not quite sound, I should like to ask you if it is not possible to arrive at some definite rule or rules with respect to the use by children of sweetmeats. For instance, is it necessary or desirable to prohibit their use entirely in the case of delicate children?

This is a matter of the first importance to settle, and one too upon which medical men require information, as they are perhaps more likely to be consulted upon it than yourselves.

I will not consider articles of diet having other than chemical action on teeth, therefore the only other article of diet having

direct action would be vinegar. This is not consumed to the same extent as sugar ; indeed, I imagine that practically it is passed by as not being used to a sufficient extent to do harm. Other easily fermentable foods do injury probably directly by causing indigestion, and so altering the reactions and secretions of the mouth from alkaline to acid.

As to habits, one's first thought, I think, would be the deeply discoloured teeth of the habitual smoker were it not for the nicotine ; this, however, appears not to be the case, and the same applies also to chewing.

British Medical Journal, 1879, vol. 2, p. 14.—S. Hepburn considers direct action of nicotine on teeth is in part on account of its alkalinity, partly through its antiseptic properties. The dark deposit on the teeth of habitual smokers is perhaps, composed of carbon. This deposit takes place extensively just in those spots where caries is likely to occur where the brush does not reach ; it is found interstitially in minute depressions, and filling the fissures on the coronal surface. Coles thinks the change in temperature is liable to injure enamel. Underwood thinks that smoking to the extent of injuring digestion will indirectly injure teeth.

Medical Times, 1858, vol. 2.—According to M. Neddeker, smoke exercises a conservative influence over the teeth. There are rarely found carious in smokers. Smoking, however, alters their colour to a dirty yellow in consequence of becoming infiltrated with empyreumatic matter.

Alcohol seems to have no injurious effect on the teeth.

I now come to the third part of my subject, viz., the effect produced on the teeth by certain medicines. I regret to have been unable to procure much reliable information on this matter.

Medical Times, 1879, vol. 1, p. 40.—M. Maurel has investigated the action of various drugs on recently extracted teeth. The drugs which he has experimented with include—(a) The most injurious :—Citric acid, tannin, chlorides of zinc and perchloride of iron, iodine, sulphate of copper, alum. (b) The less injurious :—Arsenious and carbolic acids, vinegar, corrosive sublimate, chlorate of potash, alcohol, tincture of benzoin, tincture of mint, tincture of quinine and eau de cologne. Tobacco does not injure beyond discolouring.

I think there can be no doubt that we, as medical practitioners,

have much to answer for in the little thought we give to the effect produced upon the teeth by that great offender, perchloride of iron. To the fact that this drug does injuriously affect teeth, and that to a grievous extent, we can most of us bear witness, and the only doubt I have is if other preparations of iron have not also a deleterious action on teeth; certainly a course of ammonio-citrate or iron wine has the effect of blackening the teeth and, I believe, of rendering them brittle.

In order to overcome the difficulty we are in the habit—not perhaps so generally as we might—of recommending the use of the medicine tube. This no doubt is of some use, and if the perchloride must be used, then the tube should never be omitted. I doubt myself if the tube is very efficacious, and so far as is possible I would suggest that when a long course of iron is indicated it should be administered in the form of pills, as, for instance, the celebrated Bland's pill.

Whether or not mercury taken into the system has any effect or not upon the teeth is a doubtful question. Jonathan Hutchinson, who attributed the class of teeth known as “rocky” teeth to the taking of mercury, has seen it right to alter his opinion somewhat.

Medical Times, 1876, vol. 2, p. 239.—Report of discussion at a meeting of the Association of Surgeons practising dentistry. *Résumé.*

Salter thinks evidence is wanting that mercury has any special action *per se* upon the teeth generally, and six-year-old molars in particular. Cases are also rare in which it produces stomatitis in children. “Mercurial” teeth occur among all nations, whether that drug be exhibited or no; “Rocky” teeth no less common now than when mercury was in more frequent use. He considers that “mercurial” teeth really only indicate a depressed state of nutrition.

Hutchinson does not believe that the deformed teeth which he named “mercurial” are *always* due to mercury. They may arise from a variety of causes resulting in some congestion of the alveolar process and capsule of the tooth, and any condition of ill-health may lead to these effects. Mercury, however, is by far the most frequent cause. “Stomatitis” teeth would perhaps be a more strictly correct term to apply to this phenomenon, the first four molars more likely to suffer because first developed, and therefore ready to be attacked by stomatitis occurring in infancy.

Mercurial teeth show no general atrophy and comparatively

little deformation beyond the interference with the development of enamel. Syphilitic teeth differ from them in showing defective development in shape, size and general atrophy.

There is no way of telling dental results of mercurial from that of any other form of stomatitis—stomatitis in the limited sense of those forms attended by ulceration, any disease involving congestion of the mouth and gums.

Napier thinks that "syphilitic" teeth also are due to nutrition, not necessarily associated with a syphilitic taint.

Medical Times, 1862, vol. 1, p. 450.—*Laycock*, or *nomical Diagnosis*, thinks he can confirm *Hutchinson's* diagnosis as to the mercurial teeth which are often seamed, jagged, yellow and irregular in form in persons who have taken mercury in infancy. It is a question how far they may be affected by the administration of mercury to the parents during pregnancy or during the development or growth of the ovum.

It is by no means certain that the continued use of potassium does not produce a specific action upon the teeth, the condition known as spongy gums or false scurvy being attributed to this cause.

However, sufficient has I think been said to show that teeth may be seriously injured by drugs, and we should therefore learn a lesson, and when prescribing have a care to administer our medicines as to avoid injuring the teeth.

There is one other question connected with teeth upon which we, as medical practitioners, are consulted, and which I like to be allowed to introduce into this paper, viz., what the absence of teeth tends to shorten life. During the middle period of life, while, in fact, large supplies of hard food are required for the maintenance of the vigour of the body, then the teeth play an important part in preparing this food for mastication; but as age advances, not only is the growth of the teeth completed, but the inevitable period is in the vast majority reached when all the functions are on the decline, and life is but a little more than existence; then there is no longer the requirement for large quantities of food, and it seems even that the system does better for not only a reduced amount, but for a different quality of food, in other words for soft food for which the teeth are not so necessary.

Thus it would appear that whenever the premature loss of teeth tends to seriously interfere with the nutrition of the

inducing indigestion with all its attendant miseries, yet, nevertheless, a time may come, if life is sufficiently prolonged, when teeth are not essential. The question is what this age is.

In a report by Professor Humphry upon the results of the enquiries of the Collective Investigation Committee of the British Medical Association on aged persons, March 18th, 1888, it is stated that, as remarked in former reports, the disappearance of the teeth does not portend so much as is commonly supposed. The report is based upon an analysis derived from the returns respecting 824 persons, made for the most part by medical men, in reply to the enquiries of the Committee.

Of these, 340 were males and 282 were females, between the ages of 80 and 90. And 92 were males and 110 were females, between the ages of 90 and 100; 48 per cent. were poor; 42 per cent. were in comfortable circumstances, and only 10 per cent. were described as in affluent circumstances.

Now in these, in 41 per cent. all the teeth were gone, and in some this had been the case for many years.

The teeth, it seems, disappear at an earlier period and more commonly in women than in men—though the former are more long-lived. The proportion in which they were absent was 52 per cent. in the women and 30 per cent. in the men. The reports are drawn chiefly from the class of persons who are not able to make amends for natural deficiencies by artificial aids. Thus 37 only out of the whole number had artificial teeth. Some of these had used them for many years.

The absence of teeth seems, too, to have had but little bad effect upon the general health, for although one half had no teeth, yet in only 4 per cent. is the digestion said to be bad. In 71 per cent. it is described as good.

These figures would go to show that decay of the teeth is due to other causes than indigestion.

In another paper on fourteen centenarians by Professor Humphry (*British Medical Journal*, March 5th, 1887), occurs the following with reference to the teeth of centenarians:—"The disappearance of the teeth, especially in the women, is evinced by the fact that the four women in whom mention of the teeth is made were toothless; two of the men were toothless; five had four, ten, a few, eight, and six, and these were chiefly in the lower jaw."

In extreme old age, therefore, it is evident that teeth are no

longer necessary for the preservation of life and health these old people do not attain to their old age because specially favoured as to the preservation of their teeth ; a question at what age they cease to be necessary. facts showing for instance the number of those in m who had lost many teeth previous to say seventy years when, I think, we may safely say the necessity of teeth said to cease, but we may certainly take it that, having seventy years of age, the loss of the teeth would not interfere with the healthy prolongation of life.

I have put down one or two additional facts from returns of teeth, which are interesting :—

Artificial Teeth.—300 males between 80 and 90. The number of teeth was 6 ; 87 had not teeth. Artificial teeth returns, 158 did not use them, and of these 46 had not and one had not had any teeth for 20 years, another 10 years. Besides these 46 cases many others had very few. 37 used artificial teeth ; three for many years, one for 30, one for 32, two for 30, one for 28, ten for 20, one for 15, one for 12, five for 10, one for 9, two for 6, and one for 5. With females the case is worse. Of 250 returns the number of teeth was three, but 122 had no teeth. As to artificial teeth : of 208 returns 176 did not use them ; 89 of the 176 had no teeth.

The case must of necessity be very different at the other end of the scale of life, and I can think of few sadder sights than that of a young child with a mouth full of carious, broken teeth. Undoubtedly, the absence of sound, serviceable teeth seriously interfere with the necessary assimilation of the food, which the growth and nourishment of the body cannot do without. True, in these cases, the cause is the existence of some constitutional disease which of itself will tend to bring the case early close, but the absence of useful teeth must tend to expedite matters.

In conclusion, allow me to thank you very heartily for this opportunity of meeting you. The idea of inviting you to meet me, and encouraging the reading of papers by, members of my kindred profession of medicine is, I imagine, almost unparalleled, but I quite see that there are special circumstances which make this course not only desirable, but likely to be of advantage to both parties to the conference.

Contour Vulcanite Work.

By HARRY ROSE, L.DS.Eng.

WHAT is meant by a contour case is a reproduction of the roof of the mouth and the natural teeth; that is to say, the vulcanite plate should represent a setting for natural backed teeth and should conform to and copy the surface of the gum, both on its inferior as well as superior palatal aspect, and the rugæ should be accurately reproduced.

The advantages of such a plate are that it takes up the smallest amount of room in the mouth, at the same time presenting to the tongue a surface such as it has been accustomed to. Both articulation and mastication are thereby improved, and the patient becomes used to the case in much less time than he otherwise would.

In order to produce this work satisfactorily it has been found necessary to employ a plate, either of metal "preferably," or of rubber, of a given thickness, and to maintain that even thickness by the use of a polishing plate; so that when the case comes out of the vulcanizer the surface of the palate will not require alteration or touching, with the exception of filing and finishing the edges, and a slight blushing at the lathe to remove any discolouration from the polished surface.

A vulcanite plate so produced presents a surface that will maintain its finish much longer than one packed in the ordinary way in contact with plaster. The surface of the case seems, if possible, to improve in the mouth, becoming more polished the longer it is worn; the rubber also is brighter and, I believe, tougher.

By these means plates can be made as thin as nine or ten plate gauge, and, although so thin, and extremely strong, yet being uniform in thickness. I need not remind you that this thinness of the case is a distinct advantage.

The two methods I am about to describe for the production of a polishing plate are—

1st. By taking a composition or plaster of paris impression of the inferior palatal aspect of the case after the teeth are all mounted, and the case ready for the flask.

Getting a zinc model from the impression and obtaining a counter die by dipping it into or pouring lead upon the surface of the zinc model.

A lead pattern is now obtained and a suitable plate of tin or meter metal is cut out and struck up to the model. This plate

should accurately fit and cover every portion of the palate, and should overlap part of the crowns of molars and backs of front teeth.

When stamped up it is trimmed to the required size and adjusted to the case, to which it may be tacked firmly by means of a little wax. This is to prevent slipping or rising from its place when the case is being inserted in the flask.

After the case is flaked and before the insertion of the rubber the metal plate may be rubbed over with a piece of cane or wax made soft at the end, using with it a little soap and whiting in order to brighten the surface; then wash it out with hot water to make quite clean, and it is ready for the production of a polished surface on the rubber plate.

In order to make clear the next process for obtaining a polished plate, it will be advisable for me first of all to give a description of an appliance invented for that purpose and called a steam swager.

The steam swager is a hollow gun metal chamber, the lower part of which will contain water, the upper or dome-shaped portion being intended for the reception of a plaster representation of the shape of a plate, obtained by means of an A 1 or other composition impression.

When in action the upper part is shut off from the lower by a sheet of meter metal, which forms a diaphragm between the two. There is a hole drilled through the side of dome near its upper border. This hole is of the greatest importance in allowing the steam to escape, and also the steam that is generated from the damp plaster to escape, instead of being compressed between the meter metal plate "as it is being faced upwards," and the top of dome of the surface of a model if present.

This hole should be on a higher level than the deepest portion of the model, and should have a groove leading to it from that point. Great care should be taken to ascertain that there is a free communication from the surface of the model with the external air.

Should this precaution be omitted and no exit allowed for compressed air, &c., when the steam pressure is removed the plate instead of being on the surface of model will be inverted, in other words turned inside out by the sudden expansion and consequent reversal of the pressure, being then, of course, useless.

Having obtained an impression in composition of the surface we require to polish—the process for which I will demonstrate

later on—I mix up a small quantity of plaster of paris, pouring some into the impression and some into dome of swager, having previously taken the precaution to place a piece of thick twine through the hole in the upper part.

I now turn the impression over on to the soft plaster, just the same as if casting a model on the bench, and when the plaster has set, hot water is poured on to the composition in order to soften and remove it, after which the twine is withdrawn through the plaster.

We now have a plaster cast of the plate required with the requisite perforation for communication with the external air, and must now trim off any sharp edges from our cast in order to prevent tearing of the metal before it is forced quite home on the model.

The lower chamber of the swager is half-filled with water, and a suitable piece of meter metal cut out, also a corresponding piece of brown paper to act as a washer and form an air tight joint to prevent escape of steam during the swaging process.

The sheet of meter metal and washer having been placed in position, the dome is fixed on the lower part by means of the adjustable arm and screwed firmly into its place.

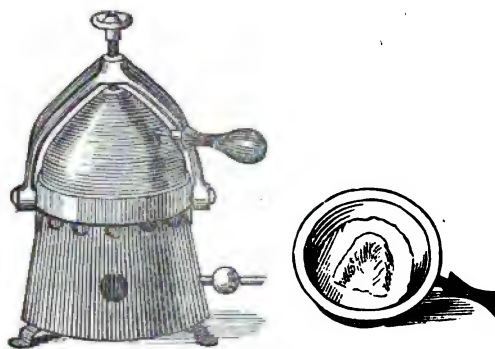
Heat is now applied by means of a Bunsen burner, and as the pressure of steam increases, so the meter metal diaphragm is forced upwards and made to copy the surface of model or cast in the dome, steam from the damp plaster and air escaping through the perforation in top of dome until the process is completed.

The pressure required for a polishing plate is about sixty pounds, indicated by the gauge fixed to the lower or steam chamber. When this point is reached, the gas should be turned out, and when the pressure has sunk to about thirty pounds, the screw that holds the dome in place may be gently loosened, and the remainder of steam allowed to escape.

The dome is now removed, and the plate withdrawn and trimmed to size with a pair of small strong scissors; it is then ready to fix to the case to be polished in the same manner as the one last named.

The three methods I am about to bring under your notice for the production of a base or matrix plate of an even thickness are—firstly, the use of a rubber plate to take the place of wax to mount the teeth upon. Secondly, the stamping up of a metal plate between a zinc die and lead counter; and thirdly, the production of a base plate by the blowing up of two or more thicknesses of meter metal in the steam swager.

In the first case it is necessary to dry the plaster while still warm to paint over its surface a solution of chloroform; the warmth of the plaster causes a rapid evaporation of the chloroform, leaving a coating of rubber on the surface. This should not extend farther than the plate is required, because it renders the trimming up of the soft rubber operation.



THE STEAM SWAGER.

A pattern having been previously obtained, a piece of rubber of the required size is now cut out, and after warming it over a spirit lamp or on a hot plate, is pressed first of all into the cavity of the palate—it simplifies matters if the lead pattern is kept on the rubber while this is being done, to prevent it from sticking together while being pressed home, especially for deep palates.

The object of pressing the rubber into the deep portion of the palate first will be apparent at once when I mention that ever the rubber plate comes in contact with the film of the model there it firmly adheres; for example, were it pressed into itself to the alveolar borders first it would be found impossible to force it into the palate afterwards.

When the rubber plate has been carefully worked back and around the teeth, and any excess trimmed off with a sharp knife, it is ready to mount the teeth upon.

The advantages of a rubber plate such as I have described

1st. That the palate requires no further packing.

2nd. That the plate is of an even thickness and copies to some extent the roof of the mouth, and

3rd. That the teeth may be, if desired, fitted and fixed to the rubber plate by means of small pieces of soft rubber, instead of attaching them to the plate with wax in the ordinary way.

If the rubber is kept warm and small pieces are used the packing of a case under these conditions is far from being a difficult undertaking. Thus the case can be packed on the model, and when the surface of the rubber has been smoothed by rubbing it with a pledget of wool or stiff camel hair pencil moistened with chloroform, and the polishing plate fixed to it, nothing more is required than to immerse it in plaster in a flask, and it is ready for the vulcanizer.

If it is not desired to do all the packing on the model, the teeth may be fixed to the rubber plate with wax, and then, after inserting the case in the flask in the ordinary manner and washing out the wax with boiling water, finish the remainder of packing.

The second method of producing a matrix plate is by stamping upon a zinc cast a tin or meter metal plate to mount the teeth on.

The advantages of this plate over the one previously named are that the case can be tried in the mouth if desired, and the teeth can be mounted without any fear of destroying the beauty and contour of the palate; it has the farther advantage that any thickness of plate can be obtained.

This matrix plate I consider preferable to the first, but inferior to the third process, which I consider realises in its results the very perfection of a contour plate.

The first and second process I bring forward not as anything novel, because I feel certain that you are all acquainted with them, but simply because they are the ones I should fall back upon did I not know the advantages of, or possess, a steam swager.

The third and last method that I have now the pleasure of bringing under your consideration is one to which I attach the utmost importance; it consists in the blowing up according to the thickness of the matrix plate required of one, two or three sheets of meter metal, on to a duplicate model cast in the swager, the model being obtained by means of an impression taken from the original in Al or other composition.

By using the swager for this purpose the trouble and expense in obtaining a zinc die and lead counter is saved, and the impression obtained is so superior to that done by standing up in wax that the two operations will not admit of any comparison.

In taking the impression of the original plaster model, it is necessary to dust it with French chalk or lycopodium to soften a portion of composition and after kneading to a lump, press it into the palate and then over the alveolar ridge as far as required.

If the fingers are lubricated with a little vaseline, the impression will not adhere to them, and when hard the impression is removed.

If there are natural teeth standing on the model, it is sufficient to take an impression of as much of the ridge as is intended to cover with the rubber plate, and not bring the teeth in. In this way it can be readily removed from the model without injury.

On the other hand, should the model through some defect present a difficulty in the way of obtaining an impression of a piece, it can be overcome by taking it in sections.

Thus the impression of the palate can be taken first when hard and the edge bevelled off—then replaced in the swager and after being dusted with French chalk, soft composition to take the undercut is pressed into its place.

The two pieces of composition can now be ready for use and fixed together with hard wax to cast in the dome of the mouth which is done in a similar manner to that described for the polishing plate.

The meter metal plate or plates are now adjusted to the part and the swager closed.

The pressure required for this part of the process is from ten to ninety lbs., which will be sufficient in most cases to produce the result such as could only be obtained by electrotyping. It is not buckling or in any way bearing the evidences of pressure, stamping up in the ordinary way.

The plate after removal from swager is carefully finished to size.

Thus we shall be in possession of a light, clean, finished plate on which to mount our teeth, and if necessary to try the mouth, test the fit, and give both the patient and dentist an idea of what the case will be like when finished.

HOSPITAL REPORTS AND CASES IN PRACTICE.

A New Method of Crown and Bridgework.

BY MESSRS. JONES AND LENNOX.

THE following method of constructing and inserting a bridge to carry four teeth, viz., two centrals and two laterals—the lateral roots supporting the bridge—was demonstrated at the Annual Meeting of the Association held at Brighton.

In the accompanying drawings :—

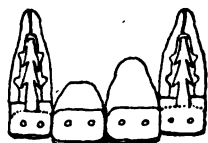


Fig. 1



Fig. 2



Fig. 3.

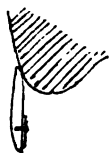


Fig. 4.



Fig. 5.



Fig. 6.



Fig. 7.

Fig. 1 shows a vertical section through the two root-canals, giving an inside elevation of the bridge in connection with the posts.

Fig. 2.—An outside elevation of the two centrals and the outer backs of the laterals.

Fig. 3.—A vertical section of a lateral when mounted.

Fig. 4.—A similar section of a central in contact with the gum.

Fig. 5.—A section through post, inner back and ring of a lateral before mounting.

Fig. 6.—An inside elevation of the same.

Fig. 7.—A horizontal section of the work when finished.

At the outset the lateral roots were prepared and a cast was taken and treated exactly as described in the first paragraph of the account of a method of crowning roots in the July number of the *BRITISH DENTAL ASSOCIATION JOURNAL*, page 495. Four flat teeth were then chosen of such size that, when the work was finished, adjacent teeth just touched each other at one point, the purpose of this being to prevent the junction of their backs from

being visible in the mouth. These teeth were ground on a model and fitted with backs, which were kept quite short to the gum. This may be done because the backs are easily soldered to a plate, and there is an advantage in point of economy in reducing the amount of metal as much as possible. The centrals were then permanently riveted to their backs. The back was next prepared for each lateral, and these were of the usual shape. The two backs of each lateral were temporarily secured to it by slightly bending the pins, and backs were prepared and fitted to them and to the roots as described in the second paragraph of the paper above quoted. A pin was prepared for each root was also prepared as there described, and in this instance, to the inner of the two backs, the same conditions being observed as to adjustment, &c. The next step was to wax the two centrals and the two laterals with the backs only in position, upon the model. Then the wax was carefully removed and invested in sand with a slight amount of plaster, the backs of the two centrals were soldered to each other, and to the (outer) backs of the laterals. The work was then finished in the usual way and tried in the mouth.

Up to this point the operations had been carried out in the workshop. The process of insertion was demonstrated at the meeting.

The first step was to attach the inner backs and backs of the laterals temporarily to the outer backs by means of small pieces of soft wire, of the same thickness as the pins of the teeth. This was done by putting the staples in from the back and bending them to the outer ends. The posts were then fixed in the roots by means of white-stopping, the post on the right side of the mouth being first fixed. The staples were then removed, a small quantity of copper amalgam was applied to the parts of the roots to which the backs, the lateral teeth were put in, the pins which held the backs through both backs of the laterals were bent towards the roots, the bridge thus firmly fixed in position. Finally the bridge was filled up with copper amalgam and finished as described in the July number of the Journal.

This completed the work.

The advantages of this method of bridging arise from the small quantity of metal used, the consequent cleanliness, lightness, smallness of bulk of the work, allowing its use in all cases where flat teeth can be applied at all, and the readiness with which the work can be removed and repaired in the event of a fracture.

removal being made by drilling out the amalgam and straightening or, if need be, cutting the pins.

The patient to whom this work was applied had been wearing a gold plate carrying two centrals, and his laterals were too far gone to admit of further gold filling.

ANNOTATIONS.

THE Annual Prize giving at the Dental Hospital of London, Leicester Square, took place on Wednesday, the 17th of July. The hospital was very tastefully decorated and the rooms were crowded to excess. The guests were received by Sir John Tomes, F.R.S., and the prizes were distributed by the Right Hon. Lord Kinnaird, who delivered an able and interesting address to the students. The successful students were:—

Saunders' scholar, Mr. A. W. W. Hoffman; Ash's prize (given by Messrs. Ash and Sons), Mr. K. Schelling; certificates, Mr. J. H. Day and Mr. A. W. W. Hoffman.

Class Prizes, Winter Session, 1888-9.—(*Mechanical Dentistry*) 1st prize, Mr. J. H. Day; 2nd prize, Mr. A. W. W. Hoffman; certificates, Mr. C. F. Badcock, Mr. J. Dunlop and Mr. V. Knowles. (*Metallurgy*) 1st prize, Mr. A. W. W. Hoffman; 2nd prize, Mr. S. C. Bright; certificates, Mr. J. A. Mallet and Mr. J. H. Day. (*Prize in Operative Dental Surgery*) 1st prize, Mr. J. B. Hordern; 2nd prize, Mr. G. G. Spray; certificates, Mr. F. Burton and Mr. J. Dunlop.

Class Prizes, Summer Session, 1889. (*Dental Anatomy*) 1st prize, Mr. A. W. W. Hoffman; 2nd prize, Mr. E. J. Preedy; certificates, Mr. W. May, Mr. J. H. Day and Mr. K. Schelling. (*Dental Surgery*) 1st prize, Mr. A. W. W. Hoffman; 2nd prize, Mr. E. J. Preedy; certificates, Mr. E. R. Bull, Mr. T. Coysh, Mr. L. C. Tomlyn, Mr. J. H. Day; Students' Society prize, Mr. F. A. Harsant.

After Lord Kinnaird had concluded his address, the Edison phonograph was put through its paces, and its wonders lost nothing by the fact that the exhibitor was a very charming young lady. The proceedings concluded with some capital music by the Hospital Musical Society, who, under the auspices of Mr. David Hepburn, are developing very rapidly into an excellent musical club. The popular dean, Mr. Morton Smale, is to be congratulated upon the power to work and to play exhibited by his alumni.

THE winter session at the Dental Hospital of London and London School of Dental Surgery will commence on October 1st, and from enquiries up to date we believe the entry of new students will exceed the average. Mr. David Hepburn and

Professor Huntington will resume their lectures on Dental Mechanics and Dental Metallurgy early in the session, and a very large number of students are preparing for the examination for the licentiatehip under Mr. Baldwin, the tutor, whose classes commenced this week.

MR. GEORGE CUNNINGHAM will deliver his lectures on operative dental surgery at the National Dental Hospital, Grosvenor Street, during the ensuing autumn, beginning on October 7th, at 6.30. The course will embrace the following subjects: 1. A consideration of Dr. Davenport's views as to the form and arrangement of the dental arches as affecting treatment, to be illustrated by models kindly lent by Dr. Davenport. 2. The results of some experiments as to the character of phosphate cements conducted by the eminent chemist, Mr. John Muir. 3. The rotary method of gold filling, illustrated by appliances kindly furnished by Herr Herbst. 4. Pulp treatment and its results tested by statistics. 5. Statistics showing the results of immediate treatment after seven to four years. 6. The treatment of some other forms of removable bridge-work. The course is open to any practitioners who may desire to attend.

THE following name should have been included in the Pass List of the Faculty of Physicians and Surgeons, as having been admitted a Licentiate in Dental Surgery: Charles Cullidge, Stroud.

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our Correspondents.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—In clearing up the rooms at the Royal Pavement, after the Annual Meeting, a few instruments were found, which I have been pleased to forward to the owners on application, and none are now missing.

Yours faithfully,

Brighton, September 7th, 1889.

WALTER HARRIS.

NOTE.—ANONYMOUS letters directed to the Secretaries of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to the Editor at 11, Bedford Square, W.C.

Subscriptions to the Treasurer, 40, Leicester Square.

All Contributions intended for publication in the Journal should be written on one side of the paper only. The latest date for the receipt of contributions for the current number is the 5th of the month.

SPECIAL NOTICE.—All communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

No. 10.

OCTOBER 15, 1889.

VOL. X.

Medical Defence.

To those aware of the magnitude of the injury inflicted upon the public by the hosts of unqualified quack doctors who are mainly enabled to deceive their victims by the assumption of medical titles to which they have no claim, it must seem marvellous that no sustained effort has hitherto ever been made by the great corporations, by societies, or by any organisation of the profession to enforce the law and do that which might be possible to abate what is fully recognised as a gigantic evil. At length there seems a reasonable hope that the long neglect of public and professional interests may be ended, and that a stop will be put to the scandalous open violations of the law which have been too long tolerated. This reform appears likely to be brought about by the action of the Medical Defence Union. This Society, recently established with the object of defending its members from the numerous legal risks

which attend the general practice of medicine, has been possible to extend its sphere of action to the prosecution of infringers of the Medical Act. It has just secured the infliction of the highest penalties upon certain persons of this description, whose headquarters were at Southampton. Several most encouraging circumstances are apparent during the progress of these cases through the court. In the first place the magistrates, after hearing argument on behalf of the defendants, showed themselves determined to adjudicate in accordance with the principles of medical law, and not to be turned from their path by verbal quibbling or insistence on ambiguities existing in and there in the phraseology of the Act.

In this respect the cases will form an important precedent. One of the defendants was a practitioner whose name had been previously struck off the register of the medical college, and he was convicted for using the form of address—surgeon. Other defendants, possessing bogus medical degrees and altered diplomas, had styled themselves “doctor” and were on that ground convicted, this assumption of the title of doctor being rightly regarded as an attempt to lead the public to believe that the persons using the title possessed a legal right to practise medicine and to obtain remuneration for their work. The only way in which a person can obtain legal recognition as a practitioner of medicine, surgery, or dental surgery is by being on the register. The possession of diplomas and degrees does not necessarily come into the question, which is entirely dependent on the absence or presence of the name on the Register.

These cases emphasise in a marked manner the importance of a Register, and will, perhaps, bring home to the careless practitioners who still neglect to enrol the nature of the risk they run. The authority of Lord Pollock was quoted to show that even a proper

medical man who *not being enrolled on the Register* assumed the title of "surgeon," or by the assumption of any other title held himself out to be specially qualified to practise, infringed the law, and was liable to a penalty.

An obvious point of some importance to the dental profession will no doubt be duly taken note of by the executive of our Association. The dental quack of the day is now mostly a self-styled "doctor." The Birmingham cases show that these gentry are amenable to the law, and it is to be hoped that before long some of them may be made to feel its power. It is satisfactory to add that whenever the quack has sufficient pecuniary means he may, on conviction, be made to pay the costs of his own prosecution. Section 42 of the Medical Act provides that penalties arising from conviction are to be paid to the Treasurer of the Medical Council and to be applied by him to defray the costs of execution of the Act. The recent cases have actually caused no charge on the funds of the Medical Defence Union, and it has thus been shown that with care in selection of cases a vast number of hitherto unassailed although by no means unassailable pests may be hounded out of existence without costing either the Union or the authorities a single penny.

The heavy penalty inflicted is another satisfactory feature in the case, and will, we trust, inaugurate a precedent for severe punishment of such offences in future.

These prosecutions will open the eyes of many of our own fraternity to the fact that ours is not the only branch of surgery in which pestilential quackery still flourishes; we might safely say that the older departments of the healing art are even more cursed than we in this respect. Our Act is in some respects more stringent in its enactments than the Medical Act. We obtained better terms from Parliament because at the time of the passing of our Act we were

a united body, and spoke with one voice; we sent by one very able man, who was empowered and act on our behalf. The medical profession through many representatives and spoke with one voice and therefore they did not succeed in obtaining a good Act. This fact should supply food for reflection to those who seem to desire to subdivide the executive of our Association, and who, if they succeeded, would weaken our hands in the future when we might have some boon to ask of the representatives of the British Parliament.

Anæsthetics.

IN our last issue we published a series of papers together with the discussions that followed, which are undoubtedly worthy to rank as a historical contribution to the science of artificial anæsthesia. In the present issue our readers will find a sad commentary upon the remarks of the speakers and readers of papers upon this subject at Brighton. On one page they will find the report of a patient insisting, contrary to the advice of those in charge of the case, in being anæsthetised by chloroform. The administrator, unwilling to allow the patient to do what he conceived under the circumstances to be an unjustifiable risk, administered eau de cologne instead of giving chloroform. After a few inspirations the patient suddenly died. The case is quoted as a warning and possibly explanatory of a similar death where chloroform was administered, which case is also reported in the present issue. It shows that there is a great fallacy in these cases, namely fear, that must always be taken into account; and that he is after all the best anæsthetist *paribus*, who is most skilled in robbing the patient of his

its unnecessary terrors. Two very interesting and detailed accounts of deaths under chloroform which have been kindly forwarded to us by Mr. S. J. Hutchinson appear also in this number. On another page we read of a death under nitrous oxide. Our readers can learn its lessons best from a perusal of the case itself. Comment on our part would be improper before the official inquiry has been held. All we can do at present is to express our deep and sincere sympathy with the relatives of the unhappy patients, and with the practitioners whose skill and promptitude failed to avert the sad catastrophe.

In contrast to these unhappy fatalities we must call attention to some interesting cases of nitrous oxide and oxygen, communicated by Mr. J. W. Dent, which bear out and confirm Dr. Hewitt's statements with regard to the excellent results obtainable from the mixture, and last but not least the generous and public-spirited offer of £1,000 by the Nizam of Hyderabad, to enable the *Lancet* to send out a competent and reliable authority to repeat the experiments carried out by the Commission. The choice of the *Lancet* has fallen on Dr. Lauder Brunton, who has accepted the task. A happier choice could not have been made. Dr. Brunton's scientific fame will give weight and authority to his fiat; his known impartiality and the universal respect which his faithful work and unquestioned ability have secured for him in the eyes of the profession generally, abroad and at home, point him out as the right man in the right place. In common with all the scientific world we await his report with impatience and with a full conviction that he will leave no stone unturned to sift this all-important question to the bottom.

ASSOCIATION OF THE

MINERALOGICAL SOCIETY

The Journal of the Association will be published
by the Mineralogical Society, 10, South Street, London, E.C. 4.

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CRISTAL COMMUNICATIONS

*From the Laboratory of Teeth, being a Catalogue
of the Teeth of Tertiary Mammals with those
present Day.*

By JOHN HUMPHREYS, LL.D.

10, SOUTH STREET, LONDON, E.C. 4. AND PHYSIOLOGY AT JOHN'S
BIRMINGHAM.

The science of dentology has proved of enormous value
the comparative anatomy, in enabling him to connect
themselves to articulate the frames of those strange
which inhabited this planet in primeval ages.

The great Cuvier is stated to have exclaimed: "Give
teeth, and I will restore the animal skeleton from which
derived," and this was almost literally true, for his conclusions
from the study of one or two fossil teeth were almost in-
correct, as proved frequently by the subsequent discovery
entire skeleton.

The study which he so ably commenced has been continued

* Read at the Annual General Meeting of the Association at
August, 1889.

our distinguished naturalist, Owen, whose works are monuments of marvellous skill and patient research, in unravelling the secrets of a fauna probably millions of years before the appearance of man and the present diversified forms of the mammalia.

Since Darwin's works appeared, and more especially since his book on the "Origin of Species," by natural selection, was published, an entirely new light has been thrown upon facts which have been strange puzzles to generations of by-gone naturalists. The modern school of evolutionists have applied themselves particularly to elucidate the problems connected with the mammalian frame, from the lowliest creatures to man, the highest development of the animal kingdom, and more especially with regard to the possession of certain muscles, and the variations in the forms of particular bones and other structures, which are apparently useless, but which point distinctly to evolution from a different ancestral form. And the teeth, as I have just stated, perhaps more than any other part of the animal mechanism, are most instructive, and afford a wide field for speculation and research.

In examining the skull of a whalebone whale one is at once led to theorise upon the different habits and environment which have caused such a remarkable change in its dental apparatus.

Instead of teeth, an elaborate arrangement of whalebone plates occupy the upper jaw, and act as a gigantic strainer, intercepting the prey swallowed in each mouthful of sea water.

But in the foetal state the germs of mammalian teeth are developed in shallow grooves, though they never calcify, and are speedily suppressed, as they would be useless to the creature in its present mode of life and diet.

One would wish that science could pierce the veil, and reveal to us the life of this huge monster in bygone ages, when it was probably amphibious in its habits, inhabiting the marshes and river margins of the primæval world, somewhat like the hippopotamus of the present day.

Of all the aquatic mammals we may ask the same question— from what ancestral types have they differentiated?

The ornithorhynchus has remained a scientific puzzle until quite recently, by reason of the horny plates occupying the incisor and molar regions, until at the commencement of last year Mr. Poulton, F.R.S., had the good fortune to examine some young specimens in the museum at Oxford, and discovered, apparently

under the cornified plates, the germs of true mammalian teeth revealing its higher origin. What strange phases must have occurred in its life history to have produced the present degenerate duck-billed creature.*

The minute and apparently functionless pre-molars in the bat, the tiny pre-molars of the squirrel, and the small pair of teeth behind the formidable upper incisors of the hare and rabbit, all eloquently proclaim the story of a change from a more numerous to a limited dentition, from a general to a highly specialised type of development.

The laws of evolution which most directly concern us as ornithologists are "the survival of the fittest," and "suppression of parts from disuse."

Stretching far back in the history of time, probably millions of years before true mammals appeared, as low down as the Triassic find remains of small warm-blooded creatures of marsupial type co-existent with the great reptiles. They were probably, from

* Since writing the above I have had the good fortune to read in the number of the Proceedings of the Royal Society, a paper written by Oldfield Thomas, of the Natural History Museum, South Kensington, on "Dentition of the Ornithorhynchus."

The skulls previously examined by Mr. Poulton were from very young specimens in the Oxford Museum, but those at South Kensington were more developed animals, about one-third grown.

The conclusions he arrives at are still more remarkable, viz., that the ornithorhynchus, like all mammals, actually possesses true teeth in the early part of its existence; the specimens seen by Mr. Poulton were so young that the germs of the teeth could only be seen confined in their sacs, covered by epithelium, but Mr. Oldfield Thomas demonstrated the actual teeth with developed crowns and good roots, which were erupted and fixed in alveolar sockets just like other mammalian teeth.

As the creature subsists upon aquatic vegetation, the crowns become worn down speedily from the intermixture of sand and grit, and as they do not receive food from persistent pulps, are soon reduced to a thin film, and at the same time the extensive absorption of the roots takes place, and the teeth are lost in its early life.

But Nature comes to its assistance in a very curious manner, for in the meanwhile, the oral epithelium dips down underneath the teeth and fills the spaces left by the absorption of the roots, until when the teeth are thrown off the alveolar cavities are filled by it, and it is afterwards cornified into horny plates, which have long been a puzzle to us, and which are none other than cornified epithelium.

The true teeth are covered with minute cusps, and approach more nearly in form to the microtestes of the Trias, so that we see in this little creature probably a descendant of the earliest known form of mammalian life.

nature of their teeth, of insectivorous habits, or preyed upon the small lizards which abounded at the period, and bore a strong resemblance to the present Australian insectivorous marsupial myrmecobius. They first appear in the Trias, represented by a small mouse-like creature, the microtestes, which has the proud distinction of being the oldest known warm-blooded denizen of this planet.

From the Oolite slate have been discovered jaws of the amphitherium, which, like its living representative myrmecobius, possessed the abnormal number of six pre-molar and six molar teeth on each side of the jaw.

The phascolotherium from the Stonesfield state presented a similar pattern of teeth, but the pre-molars are reduced to three, and the molars to four. The Purbeck beds furnished the jaws of spalacotherium and triconodon, and the singular plagiaulax, the first appearance of a rodent-like form of jaw; the front part being armed by a pair of powerful caniniform teeth with deeply embedded roots, behind which, and separated from them, are four curious obliquely grooved pre-molars and two small molars. From the Purbeck beds a great break occurs, and throughout the Cretaceous period we have no fossil forms of warm-blooded creatures, the small marsupials have entirely disappeared, owing to cretaceous rocks being of deep sea origin, the shore or land deposits not being at present recognised. When the shores of the great chalk period are discovered, many lost links in the chain of evolution will be brought to light. At present the record of land life is abruptly broken off at the end of the Purbeck beds, and only re-appears at the commencement of Eocene times. But the advent of the Tertiary age ushered in a very different life, and fossil forms have of late years been discovered in abundance to illustrate the fauna of this remarkable period.

From the Eocene beds in the Isle of Wight, from the quarries near Paris, from Switzerland and Greece, and from the Sewalik Hills in India, abundant materials have come to hand to furnish the zoologist with glimpses of its mammalian life.

The early Eocene was principally remarkable for the abundance and variety of ungulate life. These creatures were distinguished by possessing the archetypal number of teeth, viz., in $\frac{3-3}{3-3}$, can., $\frac{1-1}{1-1}$, p.m. $\frac{4-4}{4-4}$, m. $\frac{3-3}{3-3}$, or 44 in all. No tooth was raised above its fellow, there were no interspaces—characteristics possessed by man alone at the present day.

Many belonged to a group termed Anoplotheridæ, denotes, "unarmed beasts," being destitute of protective shape of horns or teeth specialised as weapons of defence. This was probably due to the fact that, judging from fossil remains, there were probably few carnivorous beasts at the period. In attacks they had to fear, their principal enemies being crocodiles and other reptiles which inhabited the marshy banks. The molar teeth were tubercular or in crescentic form, anticipating the bunodont and selonodont patterns of modern ruminant types.

There were great varieties of forms; the anthracotherium probably as large as an ox, with tubercular molars as in the hippopotamus, probably allied to the hippopotamus.

Hippohyus and chæropotamus bore a strong resemblance to the peccary and hog.

Anoplotherium, an aquatic animal, bore a likeness to the manatee in relation to pigs and ruminants.

Dichobune and dichodon were graceful forms, the former somewhat approaching the musk deer.

Palæotherium and paplotherium bore resemblance to the tapir and horse; but the latter, like the horse, lacked the pre-molar in the adult dentition, giving evidence of a slight diastema between the canine and the second premolar, which in the horse is so invaluable to man for the insect bite.

Other singular creatures are represented by the gigantopithecus, with an enormous skull, but the brain so small; the almost reptilian; the microtherium, an interesting dwarfed form the size of a rabbit.

Eocene animals then were principally ungulate, in many cases possessing the full dental formula 44; no toothless jaws, no diastema separating canines from pre-molars, but a slight gradation in form from the front to the back of the jaw, possessing no protection in the shape of horns, and the teeth remarkably small.

Eocene mammals were continued into the lower Miocene strata, when numerous other types presented themselves. Others the graceful cainotherium, resembling the small deer but with the full complement of teeth; the chalicotherium bore a resemblance to the anoplotherium, but as a large Indian rhinoceros; palæochærus, considered to be the

of the pig, to which, from its tubercular molars and large canines it was closely allied; indeed, from a little later formation the Miocene strata of Pikermi in Greece, skulls of an immense wild boar have been discovered by M. Gaudry, differing but little from those of the present day.

Schmidt declares that "the ancestral line of primæval pigs is evident enough for those who choose to follow it," and he traces it back in the following order: Middle Miocene *sus*, Lower Miocene *palæochærus*, Upper Eocene *chærotherium*.

Marsh states that the American peccary is probably derived from a different source—*eohyus*.

The Eocene *palæotherium* was succeeded by the *anchitherium* and *hipparion* in Miocene times, and finally by the primæval horse, *equus fossilis*, in the third great epoch, the Pliocene.

The illustration by Owen strikingly exemplifies the evolution in the hoofs and teeth of the horse from *palæotherium* through *hipparion* to horse. The three toes in *palæotherium* are reduced to two in *hipparion*, and lastly one in the horse, with the rudiments of two lateral toes remaining apparently as useless appendages to the central toe, and at the same time a corresponding reduction has taken place in the first pre-molar, producing the singular and abnormal wolf tooth in the horse, which is speedily suppressed, leaving the adult molar dentition represented by six teeth.

When the first Europeans landed in America there was no living representative of the horse, but geologists have discovered extensive remains of fossil forms, which had disappeared from the continent probably long prior to the advent of man.

Marsh, the great American naturalist, from extensive observations in Tertiary deposits in the United States, concludes that the American horse was probably developed from a different source from the old-world representative. The American deposits are rich in intermediate forms which are lacking in Europe.

Wallace, in treating on the geological evidence of the mammalia, illustrates very forcibly the descent of the American line of primæval horses by means of the changes in the toes and teeth, from the Eocene four-toed *orhippus*, probably the size of a fox, to the one-hoofed horse. The complication in the enamel ridges of the molar teeth are very striking, and we have now clearly demonstrated the process which has effected the formation of the complex grinding tooth with alternate arrangement of enamel,

dentine and cementum, whose unevenness renders the surface of the crown of the sharpness of a millstone.

Within the last few months an older representative of the horse has been discovered rendering now the American collection of horses complete.

The Miocene Age also produced the hyopotamus, the river hog, the hyotherium allied to the curious babirusa, and a giraffe, whose teeth are almost identical in pattern with the Nubian representative of the present day. Very singular that this helpless ruminant has managed to survive through such an enormous period of time, while most of the temporary mammals have been extinct for ages!

The deer family were represented by a musk deer—*Elaphurus aurelianus*—closely related to the African water chevrotine *Hyomys aquaticus*, which, unlike other ruminants, has canines in upper and lower jaws; also the dorcatherium, as a roe deer, but with the full complement of teeth and like canines.

The change noticeable in the ungulate dentition of the period may be summarised as "a gradual extinction of the anoplotheroid type, the specialisation of certain teeth for use of offence or defence, as in the hog, musk deer, and dorcatherium, the diminishing of the first pre-molars and a consequent increase of diastemata, and a complication in the form of the molars together with an increase in cranial capacity comparable to the creatures of the coryphodon type."

Professor Marsh states:—

"The real progress of mammalian life in America, from the beginning of the Tertiary to the present, is well illustrated by the brain-growth, in which we have the key to many other changes."

"The earliest known Tertiary mammals all had very small brains, and in some forms this organ was proportionally smaller than in certain reptiles. There was a gradual increase in the size of the brain during this period, and it is interesting to find that the growth was mainly confined to the cerebral hemispheres, the posterior portion of the brain.

"In most groups of mammals the brain has become more convoluted, and this increased in quality as well as in quantity."

"In the long struggle for existence during Tertiary time the brain won then as now; and the increasing power of the brain rendered useless many structures inherited from primitive ancestors, but no longer adapted to new conditions."

And these characteristics were continued through the later Pliocene and Pleistocene ages, resulting in the appearance of forms very similar to those now inhabiting the earth.

The dinotherium and mastodon, the mammoth which existed with prehistoric man, the hippopotamus, rhinoceros, various kinds of deer, ancestors of the ox—as *bos antiquus* and *primogenius*, buffalo and Irish elk—displaced the more lowly Pliocene forms.

Many have become extinct, some in comparatively recent times, as the Irish elk and mammoth; but the descendants of others still remain and bear evidence in their frames, and especially their dentition, of the gradual processes which have evolved the present specialised forms from their humble ancestors.

Let us briefly compare some of the familiar existing creatures with the ancestral type, and first we will take the sheep as a ruminant pattern into consideration.

We find in the upper jaw no incisor or canine teeth, but a dense pad of gum for the lower front teeth to close upon; the molar series are represented by six on the side of each jaw—three premolars and three molars.

In the front of the lower jaw six incisors and two incisor-like canines are present with a forward inclination of their crowns, and they are separated by a considerable space from the premolars—the first in both jaws being suppressed. Compare this with the ancient *dichobune* type, to which it bears a certain resemblance, but which possessed the full complement of forty-four teeth. These changes would probably be produced by the creatures which are timid and rapidly move from place to place in search of food acquiring the habit of tearing off grass and herbage, and hastily swallowing, it retire to a safe retreat for its subsequent mastication. This habit would bring about in time the diminution and subsequent suppression of the upper incisors and canine teeth—the collection of food being more readily and efficiently accomplished otherwise.

That this was the case, and that the present ruminant dentition is an evolutionised one, is evident from the fact that in the jaws of foetal calves the germs of upper incisors and canines are frequently present, but are never calcified. Fortunately we have transitional forms.

Darwin tells us that the young males of antelope montana possess upper canines, but they are lost before adult life, while the hornless musk deer possesses powerfully canine teeth for pro-

tection, and the camel and llama not only have canine outer pair of incisors, which are long and of caniniform weapons of defence.

It appears to be a rule in nature that ruminants have horns for their protection ; or in place of them canine, or llama, canine and incisor teeth specialised as fighting weapons.

Remains of the camel have been found at Pikermi, in Miocene deposits with those of creatures which have existed for many ages. Who can doubt but that the possession of canine teeth has had something to do with the preservation of an apparently helpless form ?

The horse when fighting bites with its incisor teeth, and possibly distend its mouth widely ; but travellers tell us the camel when enraged rushes furiously with its mouth wide open and can then inflict terrible wounds with its canine teeth.

Evidence of its more numerous dentition are, like those afforded in the foetal state, where the germs of the incisors are present.

In a short paper like the present it is only possible to touch a few species, and the forms I have taken will, I trust, show the lines of tooth suppression and specialisation from the ruminant type.

The later Eocene, and more especially the Miocene, show a variety of carnivorous forms, which preyed upon the helpless ungulates.

The origin of the carnivorous type must be sought far antecedent to the Eocene ; in the words of Schmidt, " we have to search for it in that dim twilight which, in the opinion of Cuvier and his followers, could alone precede the dawn of light in the mammal world."

We have seen that various insectivorous marsupials existed so far back as the Trias, and we have evidence in Australia, which was probably separated and isolated at various times, has produced from marsupial origin creatures which resemble the carnivorous, rodent, insectivorous, and other types characteristic of the mammals, and it is in this direction that Professor Huxley thinks we must seek for the origin of the carnivora.

In the Cretaceous period, representing a deep sea stage, these marsupial forms must have existed and evolved in some remote land, for we subsequently find evidence of their

remains in the later Eocene of the Paris quartres, as contemporaries of the lowly mammals then existing.

That the carnivora were produced from an insectivorous pattern is rendered probable by studying the dentition of the singular dog-like otocyon, the spoon dog of South Africa, which, unlike the ordinary carnivora, possesses four molar teeth on the side of each jaw, bristling with cusps. Professor Huxley regards this as the least differentiated, or most primitive existing form of canis, regarding the presence of the four molar teeth as a survival of the condition exhibited by the common ancestors of the Canidæ, and the existing carnivorous mammals.

One of the earliest carnivorous mammals is represented in the Eocene by arctocyon, a creature somewhat resembling a bear, but with tubercular molars like the pig, and with the low form of brain denoting its marsupial origin.

But the Later Eocene presented a wealth of carnivorous forms, for Filhol has discovered in the south of France alone some forty species, representing creatures from the size of a marten to a bear. Their remains, according to Schmidt, have been discovered in vast quantities, proving their immense numbers.

The viverrine dog cynodictis possessed the dental formula, in $\frac{3}{2}$, c. $\frac{1}{1}$, p.m. $\frac{4}{4}$, m. $\frac{3}{3}$, agreeing in its dentition with the dog, and probably the size of a wolf, but the character of the teeth bears close affinity to the civets.

The Felidæ or cat family are the most specialised of the carnivora in respect to their dentition at the present day, and are typical of true flesh eaters, their teeth being truly sectorial in character, the closure of the jaws effecting a slicing movement like a pair of scissors.

The dental formula is represented by in. $\frac{3}{3}$, c. $\frac{1}{1}$, p.m. $\frac{3}{3}$, m. $\frac{1}{1}$, or 30, showing a reduction of fourteen teeth.

In the upper jaw the first premolar is suppressed, the second functionless, the work of mastication being performed by the third and fourth in the lower jaw, the first and second pre-molars are suppressed, the third and fourth remaining, while the molar series is reduced to one in each jaw.

Let us contrast this highly-developed and limited dentition with some of the feline forms of the old Tertiary life, and we shall find the links in the chain leading up to the parent type from which the cat groups have been evolved.

In Miocene times pseudæturus possessed the dentition of

felis with an additional pre-molar in the lower jaw, and from the American Miocene, considered to have been of a panther, possessed four pre-molars and a tubercular tooth in the upper jaw, and three pre-molars and two molars in the lower jaw.

In the Canidæ or dog family we have presented a more specialised form, indicative of their omnivorous diet, and with the archetypal formula in number in the lower jaw. In the upper the third pair of molars is missing. The Miocene Canis had the full dentition of forty-four—the missing fourth pair of molars being present, and the teeth closely resembling the pattern those of the dog, only they are of greater dimensions. The second and third upper molar being especially much enlarged in proportion.

In a paper I contributed last year to the Birmingham Philosophical Society I stated, as the result of an examination of a large number of dogs' skulls with my colleague, Professor Windle, we found that sometimes both the missing upper molars present, sometimes erupted, or sometimes retained in their crypts, pointing to its ancient ancestral type.

The work of evolution is further diminishing the size of the teeth in certain breeds of dogs, for in the pug and the bulldog the shortening of the lower jaws is causing the suppression of the anterior pre-molar, which is prevented developing by the proximity of the large canine, while the hinder pair of molars is often suppressed, leaving the dentition analogous to that of the Brazilian bush dog.

The Insectivora and Rodentia appeared in early Tertiary times in great numbers, and the American naturalists, Marsh and Cope, from the prolific Eocene deposits of Wyoming have discovered a large number of primitive mammalian forms, which have assisted in the elucidation of the more specialised modern types.

With regard to the origin of the Rodentia we know that the rodent type has been produced from three widely different sources, that Australia possesses its rodent marsupial, the wombat, that Madagascar its lemurine form of aye aye, while the various species of rodents have been developed from a distinct source. Professor Owen, in his paper on the "Origin of the Rodentia," attempts to trace the rodent from fossil forms in the Wyoming Eocene, that reduction of the incisor region was gradually produced by the reduction of the first pair, and final suppression of two pairs, leaving a highly specialised pair remaining.

The lower jaws of *Calamodon* and *Esthonyx* show the three pairs of incisors present—the first being small, almost rudimentary; the second large and specialised, and the third minute.

Tiliotherium exhibits a further reduction—the first pair rudimentary, the second large, and the third suppressed; so that he assumes that the lower incisors of rodents are the second pair, the first and third being suppressed.

New light is constantly being thrown upon this subject by the researches of geologists in all parts of the world; the missing links in the chain of natural development are being yearly brought together.

Just a few words regarding man. Those of us who believe in his development through natural selection regard the occurrence of supplemental incisors and supernumerary teeth in the incisor region as evidence of his lower mammalian origin, for his teeth in number and shape bear a close resemblance to those of anthropoid apes, differing more particularly in the smaller size of the canines; which would be accounted for by the fact that man no longer requires canine teeth for weapons of offence or defence, nor for tearing his prey, as the discovery of fire has enabled him to cook his food, thereby diminishing the necessity for tearing and grinding it, as the apes with canine and molar teeth; while the development of his brain has taught him to manufacture efficient fighting weapons; but even now the lower races, as the Melanian, evince traces of their lower origin in the highly conical shape of the canines. Ape-like forms appeared very early in Tertiary times—the Miocene furnishing the *Hylobates antiquus* very closely resembling the Asiatic siamang of the present day, and also a species of *Dryopithecus*, stated by Mr. Lartet to have approached man in its dentition more than the existing apes.

Beyond that period have been found by Filhol a lemur—the *Neolemur antiquus*—and a creature still more degraded—the *Cebopithecus* or hog ape, whose tuberculated molars declare its omnivorous diet.

There are a few instances of early specialisation, which appear at first sight more complete than presented by any animal at the present day, as evidenced by the extraordinary *Machairodus*, the sabre-toothed tiger of Miocene times, where the suppression of molars was more reduced than the tiger or cat, the formula being represented by in $\frac{3}{2}$, c. $\frac{1}{1}$, p. m. $\frac{3}{2}$, m. $\frac{1}{1}$, and the upper pair of canines were so enormously developed as to project far below

the lower jaw, rendering it difficult apparently for the cranium to open its mouth, for which reason it probably died out as a species. It was at best but a clumsy beast, and could not compare with its modern representative, the tiger, with its large brain and perfect dental apparatus.

Two great forces are at work in nature, and have been from the foundation of the world—one of progression and the other of retrogression. We see it evidenced by the teeth quite as much as by any other part of the animal mechanism.

From early Eocene times the increased cranial capacity was accompanied by the suppression of certain teeth, and the development of others to suit the animal's altered mode of life; while in other cases, from causes but imperfectly known, a corresponding reduction has taken place, as in the *ornithorhynchus* and whale.

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On Working Vulcanite.*

By J. H. REINHARDT, L.D.S.I.

FINDING great diversity of opinion about the amount of steam pressure, and time necessary to produce the best results in vulcanising, I began a series of experiments to try and determine both points.

Professor Wildman, in his "Instructions in Vulcanite

* Read at the Annual General Meeting of the Association on August, 1889.

26, gives a table of the correlation between steam pressure in pounds and degrees of heat (Fahrenheit); another table, the result of Dr. Lawrence's experiments, is given on page 364 of Richardson's "Mechanical Dentistry;" a third is marked on Gartrell's gauge, neither one agreeing with the other two.

The vulcaniser used in the following experiments is fitted with both steam-gauge and thermometer, and as the latter registered a different heat to the above quoted tables, it was thought to be incorrect and another obtained; the result was still different. The steam-gauge was then suspected, so it was changed without affecting the result; altogether *six* thermometers were tried (all differing from 3° to 18°); ultimately, not being able to get one made which would be verified at Kew, one was used which registered about midway between the highest and lowest; it must, therefore, be borne in mind that in the accompanying tables the degrees of heat (Fahrenheit) are only *approximate*.

The vulcaniser used was Ash's 3-flask portable vulcaniser, fitted with Gartrell's steam-gauge and regulator, thermometer and steam tap.

The first series of experiments to determine the relation between steam pressure and heat was without flasks; varying quantities of water were used in the effort to get a thermometer to register the same heat as in any one of the tables above mentioned, and resulted as follows, viz.:

NO. I. WITHOUT FLASKS.

Pounds pressure.	DEGREES FAHREHHIT.							
	½ Pint of Water.		½ Pint of Water.		½ Pint of Water.		1 Pint of Water.	
	* Starting cold.	† Blowing off steam.	Starting cold.	Blowing off steam.	Starting cold.	Blowing off steam.	Starting cold.	Blowing off steam.
20	200?	247	217	247	208	247	227	245
30	232	262	240	261	232	262	234	259
40	255	273	250	272	252	273	243	270
50	267	282	263	283	267	282	256	281
60	278	291	273	290	277	290	267	290
70	286	297	282	299	286	297	276	296
80	295	304	291	305	295	304	285	304
90	301	311	299	312	300	310	292	309
100	308	317	305	317	308	315	300	314
110	314	322	311	322	314	321	305	322
120	320	327	317	329	320	327	310	327

* Closing vulcaniser while cold.

† Leaving steam-tap open until thermometer registered 212°.

The above table shows that great variation in the register of heat occurs when "starting cold," probably due to the expansion of confined air, while "blowing off steam" gives a fair temperature for all quantities of water. As, in practice, it is usual to use more than a quarter of a pint of water, the next experiments were made using first, one-eighth, and then a quarter of a pint, with one, two, and three flasks; as the results were similar, but one table is given.

NO. 2. USING $\frac{1}{8}$ OR $\frac{1}{4}$ PINT OF WATER.

Pounds pressure.	DEGREES FAHRENHEIT.					
	Starting Cold.			Blowing off Steam.		
	1 Flask.	2 Flasks.	3 Flasks.	1 Flask.	2 Flasks.	3 Flasks.
20	217	220	220	247	247	
30	238	240	240	260	263	
40	253	255	256	272	275	
50	265	265	265	281	283	
60	276	277	277	292	292	
70	284	286	286	299	299	
80	293	295	295	306	306	
90	300	302	302	313	313	
100	307	309	309	319	319	
110	312	314	314	324	324	
120	320	320	320	329	329	

Another series of experiments was then begun, in order to determine the relative values of vulcanising in and out of water, and with and without the use of a "polishing plate"; for this purpose four pieces of brass were used, each measuring two inches long, half an inch wide, and one-eighth of an inch thick; these were invested in plaster in flasks in pairs, i.e. two in each flask, and one of each pair had a piece of tin foil bound to it on one side; these brass blanks were replaced by the same which was then vulcanised, using two flasks each time, and sufficient water to come about half-way to the top of the lower flask.

Different heats and varying periods were tried, beginning with 75 lbs. pressure for an hour; the time of each subsequent vulcanising was increased fifteen minutes until two hours was reached; the same process was gone through at 80, 85, 90 lbs., and so on to 110 lbs.

The strength of each piece of the resultant vulcanite was tested by fixing one end in a horizontal vice, and suspending weights to the free end two inches from the jaws of the vice; by means of a protractor the amount of bending which took place before the piece of vulcanite cracked or broke was noted. After eliminating the uncooked and very brittle vulcanite, the following table was left:—

NO. 3. USING $\frac{1}{4}$ PINT OF WATER AND TWO FLASKS.

VULCANISED AT		WEIGHT IN LBS. NECESSARY TO BREAK VULCANITE, 2" \times $\frac{1}{2}$ " \times $\frac{1}{8}$ "					
Pounds pressure.	Time in hours.	Lower Flask.		Upper Flask.		Angle of Fracture.	
		In Plaster.	With polishing plate.	In Plaster.	With polishing plate.	In Plaster.	With polishing plate.
75	2	17	18	...	...	50	48
75	2	...	...	16	17	50	55
80	1 $\frac{1}{4}$	14	17	...	...	43	53
80	1 $\frac{1}{4}$	...	...	12	16	40	60
85	1 $\frac{1}{4}$	12	18	...	...	38	53
85	1 $\frac{1}{4}$	...	...	14	15	48	52
85	1 $\frac{1}{4}$	12	16	...	...	49	45
85	1 $\frac{1}{2}$	...	...	15	12	51	38
90	1	12	14	...	...	44	46
90	1	...	...	14	16	44	48
90	1 $\frac{1}{4}$	13	Defective.	...	...	40	...
90	1 $\frac{1}{4}$	...	...	15	17	42	44
90	1 $\frac{1}{2}$	15	18	...	...	45	52
90	1 $\frac{1}{2}$	...	...	12	17	42	52
95	1	9	12	...	...	37	40
95	1	...	...	17	23	54	60
95	1 $\frac{1}{4}$	12	16	...	...	45	55
95	1 $\frac{1}{4}$	...	...	16	21	53	59
100	1	Defective.	Defective.	...	14	...	49
100	1 $\frac{1}{4}$	16	17	...	...	55	55
100	1 $\frac{1}{4}$	...	...	20	21	58	60
105	1	9	12	...	...	40	51
105	1	...	...	12	16	60	53
105	1 $\frac{1}{4}$	13	14	...	...	57	50
105	1 $\frac{1}{4}$	...	...	16	17	47	60
110	1	11	12	...	...	40	49
110	1	...	...	12	24	47	57
110	1 $\frac{1}{4}$	14	16	...	...	51	54
				15	12	49	48

According to the last table better vulcanite was produced (with few exceptions) in the upper flask and by using a polishing plate. These last experiments were made "starting cold," and, although

it is believed that better vulcanite is produced by "blow steam," as the majority of dentists use the thermometer and is not intended to make further experiments in that direction a reliable thermometer can be obtained.

[We are pleased to be able to promise some further contributions, containing particulars of future experiments by Reinhardt in future numbers of the Journal.—ED. *J.B.D.A.*]

Iodoform : Its Action and Uses in Dental Surgery

BY R. DENISON PEDLEY, F.R.C.S.Ed., M.R.C.S., L.D.S.

IODOFORM is prepared by the action of iodine on a hot solution of carbonate of soda or potash in diluted alcohol. This substance is chemically allied to chloroform, and is in the form of crystalline scales, and as a very fine powder.

It is soluble in ether, chloroform, rectified spirit, eucalypti and collodion in varying proportions. When heated iodoform turns brown in colour, becomes liquid, sets free a violet-coloured vapour, and leaves a black residue, which disappears on continued ignition. Iodoform is not readily decomposed, except by heat, and sparingly so in solutions of ether and alcohol. When decomposition takes place the colour changes from light brown to very dark brown, and iodine is set free.

Free iodine can always be detected in any preparation of iodoform by mixing with a small quantity of starch paste; the colour of the latter will be changed from a light blue to a deep blue. Iodoform is a powerful antiseptic and deodoriser. It is used in general surgery, in fine powder dusted over wound operations, syphilitic sores and foul and indolent ulcers. Iodoform wool is used instead of, or in combination with, Listerian dressing.

Though containing nine-tenths of its weight of pure iodoform is not an irritant like iodine, either applied externally or taken internally. So unirritating is this drug that it has been dusted over the conjunctiva in cases of purulent conjunctivitis and freely applied to the peritoneum after abdominal section with marked benefit. It is highly valued by surgeons for its antiseptic and soothing qualities, and for the remarkable effect it has in preventing putrefaction.

* Read at the Annual General Meeting of the Association at Brighton, August, 1889.

Iodoform is one of the most useful drugs which the dental surgeon can possibly have to deal with in his endeavours to keep the mouth in a healthy condition. The gravest objection which can be urged against its use is the disagreeable perfume. That you may mask, but cannot altogether conceal. It is at any rate a healthy odour, and far preferable to many which emanate from the oral cavity.

We propose to point out briefly : (a) Those affections of the structures outside the teeth where iodoform has proved beneficial. Then to consider (b) The effects of iodoform on the pulp living or dead.

(a) 1. Unhealthy wounds, such as may be seen at times after the extraction of a tooth, where the edges of the gum are congested, swollen and everted, small greyish sloughs being thrown off, the patient meanwhile complaining of constant pain. Here we would remark, in passing, that this condition may be induced by the use of dirty instruments, though we have more frequently seen it in patients who are either alcoholic or anæmic.

2. Pyorrhœa alveolaris, that mysterious disease which attacks the alveolar margins, and in which with more or less discharge of pus round the necks of the teeth the sockets dissolve away.

3. Ulcerative stomatitis, which occurs so frequently among the children of the poor, affecting the margins of the gums and the mucous membrane of the cheek, as if they were poisoned by constant contact with foul discharges and carious teeth.

4. Necrosis of alveolar margins, whether due to syphilis or the mercury taken for its cure, to an extension of alveolar abscess, or the result of debilitating fevers, as measles and scarlatina.

In such cases we have found iodoform useful as a remedial agent, and as a sedative in relieving pain, promoting healthy discharges, healthy granulations, and the rapid healing of parts.

The most convenient forms are : a saturated solution of iodoform in ether or eucalyptus oil ; equal parts of iodoform and tannic acid ; iodoform in fine powder. These can be applied with a camel's-hair pencil, or with the simplest form of syringe, viz., that of a glass tube, small and of fine calibre at one end, with an ordinary rubber teat fixed to the other.

(b) In the course of removing decay from a tooth (which previously has not been painful), we sometimes expose the nerve, either in an endeavour to take away all unhealthy tissue, or in our conscientious desire to shape the cavity for the reception of a

filling. Supposing it to be a mere pin-hole exposure cover with court plaster, and avoiding pressure feel pressure that the tooth will give no further trouble ; but it is far better if the exposure is large and the surrounding dentine sound the usual treatment recommended is to mix a small portion of zinc with oil of cloves, place over the pulp, over this a disc of metal, the edges of which shall come well on to the dentine. This method we have long discarded for two reasons (1) because the patient was often subjected to much pain attending the removal of the filling and the destruction of the pulp (2) if no pain followed, the pulp was frequently found dead almost invariably putrid, the first intimation of the same being an alveolar abscess of acute type.

When we have filled a small concave disc of metal with iodoform, as a substitute for the oil of cloves and zinc, our experience has been entirely different. The sedative action of iodoform in the majority of cases, prevented further trouble, and the remarkable effect iodoform has in preventing putrefaction of itself in the following manner. When the nerve has for an unknown reason lost its vitality, we have never found it liable to putrefaction. It has been mummified or moist, but sweet and smelling strongly. We have been enabled to treat large numbers of exposed nerves by means of this drug without it we should unhesitatingly have proceeded to remove them and treat the teeth as pulpless.

After destroying the nerve of a tooth by means of any more immediate method, our first efforts are directed to the removal from the pulp chamber and the nerve canals. In order to be properly carried out the choice in number and efficacy of fillings is considerable, for here we have healthy roots to be filled with, and it matters little whether we use gold or wood, oxychloride or leaden points, gutta percha or asbestos fibre as they are properly introduced ; but all are very well adapted where there are many cases where one finds it impossible to remove the contents of the nerve canals, and in such cases iodoform should be placed either at the orifice of a canal or in close contact with the part of the devitalised nerve which remains. Should there be any doubt as to any considerable portion of the nerve being left behind, it is a very safe practice and better by far to fill the pulp chambers with iodoform than to use cotton wool soaked with carbolic, creosote or any of the essential oils, as these

become absorbed, and when the pulp chamber is opened up later on the cotton is stinking.

We shall here mention two cases in practice which may not be altogether uninteresting, on account of a somewhat unusual method of procedure.

Dr. G., a busy medical practitioner, sought advice. He was suffering from severe toothache. On examination the pain appeared to proceed from the six-years-old molar in the upper jaw, right side. There was a large cavity on the median surface extending to the gum line, and the pulp which was exposed was acutely inflamed. As time was a consideration, and the patient was loth to lose the tooth, nitrous oxide gas was administered. With the aid of a Shaw's engine a rose-headed drill was run into the pulp, and a small pledget of cotton dipped in carbolised resin was introduced. In a few minutes all pain had ceased. The cotton was removed and the pulp chamber was filled with iodo-form paste, over it a metal disc, and the cavity in the tooth filled with a permanent gutta-percha filling. Two years have elapsed, and though we have had the opportunity of examining the tooth at intervals, no trouble has necessitated the removal of the filling.

Mr. N. came to have a tooth stopped—an upper wisdom tooth on the right side. On the labial (outer) surface a large cavity was found. The tooth had not been at all painful. There was no sign of an exposed nerve, and after carefully excavating the cavity we filled it with a Sullivan's amalgam.

In less than an hour the patient returned. He was in an agony of pain, the tears rolling down his cheeks. The filling—not yet hard—was removed at once, and on careful examination a minute speck in the centre of the cavity clearly pointed to a pin-hole exposure. Notwithstanding the application of carbolic, creosote and other drugs, the pain continued as acutely as ever. Gas was administered and the same procedure was adopted as mentioned in the first case. Two years and four months have passed away, and last week we examined the tooth, which has been perfectly comfortable. We received with meekness a kindly hint from our patient that a repetition of the above was not desirable.

When the nerve of a tooth has passed into a state of putrid decomposition the uncertainty is great as to its future usefulness. Most practitioners are agreed as to the *advisability* of removing all decomposition from the pulp chamber or nerve canals; but the root filling is a matter of some controversy. It seems essential

that the filling shall be permanently antiseptic and capable of being easily removed. We find by long experience that iodoform answers the purpose well.

To obtain the full advantages of iodoform it is necessary to have the drug in a concentrated form, and we recommend the following preparations :—

Iodoform Paste.—Oil of eucalyptus, 20 minims ; oil of clove, 30 minims ; creosote, 100 minims.

Into this gum mastic is dissolved to saturation. After filtered through cotton wool the solution should be incorporated with iodoform until the whole becomes a solid mass.

This preparation is always moist and (used with wisps of cotton wool) is a good permanent root filling for chronic dead teeth, and forms an excellent capping for exposed nerves under a concave disc of metal.

Iodoform Cement.—Iodoform in fine powder, and strong tincture of benzoin ; mix into a thick paste.

This preparation should be kept in a wide-mouth stoppered bottle to prevent evaporation.

When mixed with fine cotton on a glass slab it forms an excellent root-filling for healthy teeth, and sets quite hard. It can also be used as a floor in very sensitive teeth under a non-stopping.

Iodoform Points.—These consist of thick floss silk or cotton thoroughly saturated with iodoform cement, and when dry cut into short lengths and put by for future use as permanent root fillings.

Dental Hygiene.*

By J. T. BROWNE-MASON, L.D.S.Eng.

MR. PRESIDENT AND GENTLEMEN,—Having been invited by the President of our branch to open a discussion on what I may call Dental Hygiene, I venture to make these few remarks, deprecating any idea that I shall be bringing anything before you that you do not know already, but trusting that my words may penetrate beyond these four walls, and reach more particularly such of our patients who have young children in their charge.

It is of paramount importance that they should be taught not only to be on the watch for, and seek to remedy the ravages

* Read at the Annual Meeting of the Western Counties Branch, Cambridge, July, 1889.

dental caries, but to use all possible means of averting the tendency to dental disease which the rising generation undoubtedly exhibit to all of us who have the watching of the development of the masticatory organs.

That this tendency to disease in the masticatory organs is a serious and ever-increasing *evil*, no one will deny who reflects on the troubles that follow in the train of defective teeth; take for example the serious consequence of impaired digestion, with its attendant maladies which show themselves in so many ways in different individuals, even if we do not include the ailments which manifest themselves by reflex action in various parts of the body, sometimes affecting organs of sight, hearing, and smelling, and sometimes acting upon limbs and functional organs at a remote distance from the original source of irritation, but always tending to embitter, if not ultimately to shorten, life.

Walter Savage Landor boldly declared that he would rather lose his intellect than his teeth; and without going so far as that illustrious man, there are few people who are not reminded, through dental caries, at some stage of their life that they have teeth, and we know that there is no part of the human organism more subject to attack and disorder, so that if we can direct our discussions into a channel that may tend to strengthen the resistance of these organs to attacks of disease, we can certainly be employed in no more useful way at our meetings.

Now to begin at the beginning; a perfect set of teeth is more likely to prove caries-resisting than a set which from the birth of the patient have been full of predisposing faults in enamel and dentine, and these teeth would have a better chance of long immunity from disease if they grew in well developed shapely jaws. It is needful for the development of a perfect set to bear in mind that the tooth germs exist in the uterine life of the foetus, and for the teeth to be of a good type it is essential that the tooth germ should have the proper constituents supplied to it for assimilation for its due calcification, both before birth, by means of the blood vessels of the mother, and after birth through the arteries of the child.

Bearing in mind, then, that the rudiments of vascular membranes of twelve teeth in each jaw are actually observable at about the fourth month after conception, and that at birth the germs of the deciduous teeth have pretty nearly attained the full size which the crowns of these teeth will attain, and that all these germs are

more or less ossified, the diet of the mother should, as practicable, include such elements as are fitted for the due maintenance of these organs, together with what is required for the general support of the coming child. She should partake of the nitrogenous or tissue-forming principles, and supply the ordinary food of health, meat, poultry and fish, &c., with such foods as contain casein, milk, which comprises all the tissue-forming principles, and eggs, which afford us a good example of food, containing all the different principles essential to the development and growth of the body; whole meal bread, in preference to ordinary bread, from which all the bone-forming constituents have been eliminated, and oatmeal in the form of porridge would be most valuable articles of diet—the two particularly lay stress on for the sake of the large quantity of phosphate of lime contained in them. At this stage, to secure that is necessary for the development of the teeth, we must refer to the family doctor, but we, as we have the opportunity, often play our part by calling the attention of parents to the questions of health.

In the next stage we must recollect, that the teeth are appendages which differ materially from others, such as hair and nails for instance, in the fact that as they are formed they continue to grow, and if they present themselves defective, all malformations or faults of texture are incapable of rectification, and the few short years of childhood settle the quality of the teeth for life.

This being the case the child should continue such nourishment as will perfect the tissues in the highest degree. If unfortunately the mother is herself, from any cause, really unable to supply the needful milk nourishment for the infant, the child should undoubtedly by preference be suckled by a wet nurse, and the best dietary for forming all the tissues is the natural milk. Should human milk be unprocurable, asses' milk should be used, as an analysis the nearest approximation, and after this cows' milk diluted with water; this of course falls within the province of the medical attendant to see to, but I am sure we should have healthier children, and better developed in every way, including the teeth, if children were nursed or fed on milk alone, instead of the multitude of substitutes so often given from the mistaken notion that milk requires supplementing in some way. I am rather mother forgetting, what I reassert, on the authority

Risdon Bennett, M.D., F.R.C.S., &c., milk to be "the food prepared by nature for the maintenance of the life of the young," containing as it does "the nitrogenous or tissue-forming principles, the carbo-hydrates or chief force-producing agents, and the mineral, saline or inorganic principles," inclusive of phosphate of lime, which as we know are also needed, in the formation of the teeth and kindred organs, and I think the child may be kept on milk advantageously much longer than the bulk of our patients are disposed to allow; its abandonment for more solid foods often producing disturbance of the digestive organs and injury to the texture of the teeth and bones, by the withdrawal of the needful phosphate of lime salts, which the baby's natural food so richly possesses. In my own city alone the mortality amongst infants has been of late very great, and this has been largely traced to injudicious feeding, showing what ignorance prevails in this matter, and *that*, even amongst classes where one would look for better things. I know one young mother who fed her baby of six months on beef tea and bread, and then wondered that notwithstanding such nourishment it was ill and did not thrive!

"A diet of milk, bread and butter, eggs, and the stronger farinaceous articles, as a rule, should constitute the main food of children till approaching four years of age." I again quote from Sir Risdon Bennett, and I would suggest that the bread should be wholemeal bread; and, to continue my quotation, "it should be remembered that, in proportion to its weight, a growing child requires a much larger amount of both nitrogenous and carbonaceous material than an adult; the poor will obtain a sufficient supply of these in sound well-cooked potatoes, salt, and oatmeal, if even bread and milk or buttermilk cannot be obtained." I would remark here that no mention has been made of butcher's meat, and I think this is an article of food that should be given but sparingly at this period.

I have laid stress on the food question of the period of dentition, as I believe it a most important one; we should bear in mind that the permanent molars are in process of formation, as a rule, until eighteen years are reached, and the wisdom teeth are erupted, and during all this period we must suppose that the quality of the teeth is affected by the nutriment supplied by the blood.

The late President of the Odontological Society, D. Corbet, Esq., in his presidential address, argued on similar lines to those

I have here brought forward as to the influence of the diet of the mother and the child on the formation of the tissues of the teeth during dentition, *i.e.*, the period I have just reviewed; and I repeat with him that "on the skilled medical attendant rests the responsibility of the proper development of the teeth of the child during its intra-uterine life and the early years of childhood, in far as it lies within the scope of human skill to direct this development to a proper issue."

There are indications that the dentine and tooth pulp are susceptible of vital action up to a late period of life, at all events, and it is not possible that this vital action may have a large share, not only in building up a rampart against decay within the pulp cavity—which is admitted by all, under favourable conditions, does effect—but also in keeping strong the natural out-work of the dentine, and maintaining a condition in this barrier, capable of averting the invasion or retarding the advance of caries. Hence diet at this point is of the first importance.

The question of how to keep the teeth sound after they have erupted embraces in fact all dental surgery, and would need a book to describe; but there are a few notes we must, I think, include in any remarks on dental hygiene; these are, that the patient cannot be brought too early into habits of strict cleanliness; a tooth brush cannot be put too early in the child's hands with instructions how to use it. The shape of the brush too is of consequence; thus the hair of many brushes is cut off at a dead level so that the bristles present an even surface. It is, therefore, not possible for the hairs of the brush to pass between the teeth. The brush (which should be used up and down in the line of the interstices of the teeth) should be either notched crosswise, or have—what I prefer—the centre rows of hairs lengthwise considerably longer than those outside. Messrs. Metcalfe, of London, in their No. 9 H. make, to my mind, an ideal tooth brush.

Care should be taken to remove all food *débris* by the aid of the brush night and morning at least; for we know how great a factor of dental caries is pulped food allowed to remain in the spaces between the teeth, or in the interstices of the crown at the base of the cusps of a molar, for instance, where there are frequently natural fissures leading directly to the dentine beneath. This food *débris*, passing, as it rapidly does, into a state of acid fermentation, acts as a chemical solvent of the earthy constituents of the tooth tissues, and this, at all events, may be pressed on

patient as one source of dental caries that may be combatted by their own individual attention. The presence of tartar calculus, too, may, and should be, kept down in this way, and thus another source of mischief be averted; for it should be pointed out that tartar formation is the direct cause of disease, which ends in absorption of the bony sockets, which retain the teeth in the jaws.

The tooth brush is much aided by the use of a dentifrice; in the choice of this I suggest a prescription for ordinary use, containing the purest white soap in a medium of powdered magnesia or precipitated chalk, flavoured with otto of roses, unless anything else is called for by special conditions, for which I write special prescriptions to meet the case. Ordinarily I think a simple dentifrice such as I indicate is all that is needed, and if more is required, the patient should consult the dental surgeon. A tooth powder should fulfil two requirements: it should be soapy, so as to remove the viscid mucus of the gums; and it should be a fine polishing powder, free from gritty particles, which could cut into the teeth. These requirements are sufficiently met by a powder such as I have indicated.

When acid medicines are being taken it is a good plan to wash the mouth out with an alkali, which can be conveniently done by adding a teaspoonful of carbonate of soda to the contents of a water bottle. The various salts of iron stain the teeth, but unless given in an acid form do not attack them, and the stain can easily be subsequently removed; indeed, it may be said that medicines often get accused of doing mischief, which is more truly due to that state of health which the medicines were given to correct.

There is, I think, no question that when the teeth are set in a well-formed dental arch with just space enough between the teeth to admit a silk thread to be easily passed without catching between each individual tooth and its neighbour in the same jaw, that the conditions in such cases are much more favourable to promoting health in the mouth, than when the teeth are tightly wedged together, or, worse still, overlapping each other from lack of space; and when young mouths promise to be overcrowded, patients would do well to submit to lose—say four teeth, one bicuspid or molar from either side of each jaw to relieve pressure.

I think that parents and guardians of young children are often mistaken in not earlier consulting the dental surgeon. Advice in the early stages of second dentition will often repay the patient in after years a hundredfold in placing the teeth under more favour-

able conditions for promoting dental hygiene. After illness teeth show special aptitude to develop dental caries, and food and medicine which derange the stomach and coat the tongue and sympathize with the gastric disturbance invariably react prejudicially on the teeth ; but though I notice these facts I do not see how we can do more than use the remedial means at our disposal to restore the damaged teeth, and prescribe special dentifrices to meet such cases as they arise.

The patient, of course, in general cannot control the development of the jaws, and can only seek advice from time to time, which from the falling out of the deciduous teeth should be at least once a quarter until the dental arch is fairly formed, but I would point out one way in which those who have charge of children can avert a great deal of mischief—I allude to checking the infant in the very mischievous habit of thumb-sucking.

I know I should be greeted with a howl of execration in some quarters, and by some nurses who look on this practice, particularly at the weaning period, as a special solace to the tired infants, and who place the thumb in the child's mouth, thereby actually teaching it the practice, which, if persisted in, will cause a most unfortunate deformity by thrusting the upper jaw forward and thus protruding the upper incisors into a V shape, in many cases, even in quite tender years, causing a space of half an inch or more between the lingual surfaces of the upper incisors and the labial surfaces of the corresponding teeth in the lower jaw, which at the same time are thrust back upon the molars and crowded one over the other, sometimes causing such lack of development in the lower jaw, that even if the habit be broken through, the mouth never resumes the shape nature intended it to be, besides causing a crowding of the incisors, canines, and cuspids of the permanent lower set, in a way most favourable to the incubation of disease, not to speak of the permanent deformity.

I think that hygiene generally, as well as specially, would be best promoted by bringing home to all concerned the advantage that would be derived if popular physiology were included in the scholastic curriculum of our girls, that there should be no excuse for any mother, actual or vicarious, being in ignorance as to the important influence that special diet has in the production of strong and healthy bone, and the special need there is of extraordinary attention to the food partaken of during the period

pregnancy and lactation, as well as given to her children in early life.

As I have only intended to open a discussion in what I have advanced, I am aware of many deficiencies and that much might be added which will doubtless be supplied by subsequent speakers on what is to me a fascinating subject.

HOSPITAL REPORTS AND CASES IN PRACTICE.

Notes of a Fatal Case of Nitrous Oxide Anæsthesia.

(Kindly furnished to us by the Operator, G. W. WATSON, L.D.S.Ed.)

LADY MILNE called on me on September 28th with a note from Dr. McBride, whom she had consulted with regard to a discharge of pus from left nostril of a year's standing. Dr. McBride had examined the patient, and came to the conclusion that it was a case of disease of the antrum, and sent her on to me for treatment. I found on examination the second left upper molar abscessed and very painful on pressure, the outer alveolar wall over roots of tooth was also swollen and painful. I informed her ladyship that I would require to remove this tooth, and also the third left upper molar which was not in a good condition either, and that an opening would require to be made into the antrum through the socket of one of the teeth.

I proposed that Lady Milne should take nitrous oxide gas for the operation, which is the anæsthetic I have always employed. She agreed to this, and asked if she was required to bring her medical attendant with her; I replied, "Do so by all means, though it is not absolutely necessary to do so." Lady Milne mentioned also that she had a weak heart, but I thought nothing of this, as it is a common expression for patients to use, and meaning as a general rule very little. I made an appointment with Lady Milne for Oct. 1st, at twelve o'clock. Punctually to the time she came, accompanied by her husband and daughter. Patient was stout, somewhat pale and flabby-looking, her age owing to the manner of dressing I took to be about sixty, but I found afterwards she was seventy-one. On being seated in the chair, I asked patient when she had breakfasted. She replied nine o'clock. The upper part of dress having been undone I proceeded, with the aid of an assistant, to administer the gas. Her breathing I noticed was weak and shallow,

so I requested her to take deeper inspirations; however not much improvement.

I continued the administration till I judged she was thetised, took away the face piece, removed the two made a free opening into the antrum, from which the good stream of pus, and I was swabbing this away with when I noticed the face assume a very alarming appearance respiration becoming almost imperceptible. I immediately called off my assistant for medical aid, placed the patient in a prone position, pulled out the tongue with forceps and cleared the back of the throat from blood and mucus, elevated the chest and compressed the walls of chest to try and induce respiration. Nitrite of amyl was also applied to patient's nose, but with no response. Three minutes after Dr. J. Murdoch Brown arrived and he injected ether, first into the wall of the chest and then direct into the heart—artificial respiration being carried on for a considerable time by Dr. Brown and myself without success. When I first became alarmed the face had assumed a waxy appearance. A minute or so after this the face became of a bluish hue, which broke up into patches, less and less gradually disappearing, leaving the face of a yellowish color but with a very peaceful expression.

Since the death I have been informed by her medical attendant that Lady Milne suffered from fatty degeneration of the heart, that, no doubt, syncope was the cause of death. What contributed to it was the fact that her ladyship's corsets were so tight that they had to be slit up with a knife. Lady Milne informed me that her mother had a presentiment that she would not survive the operation, and there is no doubt that Lady Milne was deeply impressed by this—so much so that during the operation, which had been seriously interfered with, her stomach being quite full of undigested food which was ejected during the process of artificial respiration.

Notes upon the First Permanent Molar

By JOHN HUMPHREYS, L.D.S.I.

JUDGING from their position in the jaws, from their large size, from the numerous cusps covering the crowns, the six-year-old molar teeth are evidently intended by nature to perform a most important function, the comminution and trituration of human food.

A glance at the formation of the crowns of the upper molars will exhibit the well-known anterior internal cusps much more fully developed than in the second molars; the transverse ridge is much more apparent, and it frequently happens that an additional cusp is formed in many mouths by the elevation of the cingulum outside the anterior internal cusp.

The roots likewise are generally well formed, widely divergent—the palatine fang being especially strong and frequently curved.

In the second permanent molar, which is usually of smaller size, the anterior internal cusp is not so large, and the transverse ridge more feebly developed, and I have never noticed the raising of the basal ridge to form an additional cusp; the roots likewise are more or less connate, and frequently the three are cemented together.

It is quite evident, then, I think, judging from the construction of the crown, and from its remarkably strong implantation, that the first permanent molar was intended to play the most important part as one of man's grinders.

If we examine the first lower permanent molar, we shall see a tooth similarly constructed. It is by far the largest of the lower molars, possessing four strong and well-developed cusps, with an additional posterior one, making its crown surface quinquicusped, agreeing in this respect with the anthropoid apes.

Its roots are long, strongly formed and deeply implanted. Its fellow, the second molar, is smaller, quadricusped, often with connate roots.

But instead of finding these powerful teeth useful for the greater portion of human life our experience is that by far the greater number of mouths that come under our treatment have carious first permanent molars quite early in life.

In hospital practice it is quite lamentable to notice the great ravages that caries effects in these teeth amongst children of tender years, every dental surgeon must be impressed by the fact. I do not hesitate to state that seventy per cent. of extractions at our Dental Hospital are first permanent molars.

Last year I examined and retained all the teeth extracted at the Birmingham Dental Hospital, and that fact was most thoroughly demonstrated.

It is not that one portion of the tooth is more liable to disease than another; sometimes caries appears upon the surface of the crown in the fissures where the folds of enamel meet, and it is

equally as common upon the mesial and distal surface, and the buccal surface seems to soften and disintegrate in an a fashion, defying all attempts to arrest the progress of disease insertion of a filling.

Last winter I dissected and prepared the jaws of a child months old, and in doing so I was impressed by the development of the crowns of the six-year-old molars in both jaws at an age.

You will observe by these specimens that the contour of the crowns are completed, and calcification has to some extent taken place.

This fact seemed to my mind to offer a solution to the problem we have proposed.

During the first twelve months of an infant's life there is an enormous drain upon the system for lime salts, both for bone and the calcification of the deciduous teeth. It must be then, I think, that any interference with the general health of a child, any retarded nourishment due to infantile diseases, most assuredly leave their mark upon the first permanent teeth, the crowns of which are calcifying at the time.

Another great reason is that children are so seldom supplied with good mothers, their diet being frequently of the farinaceous character, of patent foods generally advertised, which at an early age is quite unsuited for digestion and assimilation.

The second permanent molar being developed much later than the first has none of these evils to prevent its proper calcification; consequently is much more frequently found to be a sound tooth and is retained to old age.

As a prevention I would suggest that it cannot be too soon impressed upon the minds of mothers that their duty does not consist in bringing their children frequently to consult their dentist at periodical visits, which, of course, is most important, especially until after the age of puberty, but that to a certain extent they should have the *formation* of their children's teeth in their own hands.

A dentist may do his utmost by skilful treatment to arrest the ravages of caries, but he can never supply fresh lime salts to the frail enamel. In spite of the degeneration of teeth generally which is observed in civilized races, I cannot help believing that if infants were nourished naturally by the mother's milk, which contains all the elements for the formation of osseous tissue, failing the mother's breast, a supply of pure milk unmixed

farinaceous food for the first *nine* months of life, but with a moderate proportion of lime water, that the condition of the first permanent molars might be greatly improved.

A Few Cases of Secondary Hæmorrhage and Treatment.

By L. BURGoyNE PILLIN, L.D.S.Eng.

THE following excerpts from my "Special Cases Book" appear to me to be somewhat exceptional, and so likely to be of interest to my *confrères* of the British Dental Association, that I venture to send them for publication. The length of time between the operations and the occurrence of secondary hæmorrhage is remarkable and, in my experience, very rare.

CASE I.—Captain S——, æt. thirty-six, a very tall finely-built man, had suffered whilst abroad for a long time from a troublesome anterior lower molar, which he resolved to have removed immediately on his return to England. He had not previously lost a permanent tooth, and the general appearance of the mouth, together with his fine physique, indicated (as is usual under such circumstances) a difficult extraction, and such it afterwards proved to be, for the elevator had to be employed for removal of posterior root. Somewhat copious bleeding followed, which yielded, however, to the usual simple remedies.

Three days subsequently profuse bleeding came on during the night; at my visit I found him very low and retching violently. After thoroughly cleaning the mouth and socket, I plugged the cavity with lint soaked in liquor ferri perchloride fort., with prompt and satisfactory result, as it appeared at the time. Four hours later the hæmorrhage returned with still greater activity, notwithstanding that the plug still remained as I had left it. A shellac plate very accurately fitted to the surrounding parts was made and thickly lined with equal parts of tannic acid and pulv. gummi tragacanthæ inserted, a piece of Stent's composition placed on that part of the plate occupying the space whence the tooth had been extracted, the jaws brought into apposition and there retained by a four-tail bandage.

With a view to tranquillise nervous excitability on the one hand, and to diminish the *vis a tergo* on the other, I administered the following prescription:—

R Potassii Bromidi, grs. x.
 Extracti ergotæ liquidi, m̄xv.
 Aquæ distillatæ, ad. ʒjss.

Draught to be taken at once and repeated after four hours.

These had speedy and gratifying results, so on the morning I removed the shellac plate, leaving the plug in. This, however, I twenty-four hours subsequently removed, and any recurrence of bleeding. The patient was a total invalid, and, as I subsequently learnt, a sufferer from albuminuria.

This case, and No. 5, are particularly interesting, as they occur in patients, both of whom are hyperæmic sthenic, in whom there should have been more than ordinary proclivity to blood, and the fibrinous plug therefore more difficult to dislodge from the bleeding vessel. Possibly (I should say) the hæmorrhage so long after the apparent sealing of the vessel was due to the abnormal quantity of albumen excreted in the blood.

CASE 2.—Mr. J., æt. twenty-eight, of medium build, nervous temperament, had posterior upper bicuspid diseased. Bleeding stopped naturally. There was nothing remarkable about the operation, the extraction being a remarkable one. The fifth day afterwards he again paid me a visit, and stated that bleeding commenced as he was retiring to bed the previous evening, and had been very troublesome all day. I applied the same treatment as in the former case, with satisfactory results.

CASE 3.—The Rev. J., æt. thirty-one, a brother of the mentioned patient, rather broadly built, very anæmic and below par, consequent on great fasting and total abstinence from animal food for nearly twelve months. I ordered a generous diet, iron and quinine with cod liver oil twice a day for a week, and then operating. At expiration of that time I removed the diseased bicuspid and adjoining molar (upper), plugging the socket immediately with lint and liq. ferri perchl. ft. On the third day the plug came away *sponte sua*, and all seemed well. On the eighth day after the extractions profuse and prolonged hæmorrhage set in. Previously to my seeing him, nitrate of silver had been ineffectually tried. A plate of a similar kind as that which had proved so successful in the former instance was inserted, and similar general treatment pursued. On removing the plug four hours after, slight bleeding supervened but yielded

to the re-insertion of the plate ; this occurred several times, but in the end all went well.

CASE 4.—Miss J., about twenty-five years of age, a well developed and apparently strong subject (*sister of the two former gentlemen*), had a *dead* upper lateral incisor removed ; *no bleeding whatever at time of extraction*. Fearing that the idiosyncrasy of her brothers might exist in her, I took the precaution to wipe round the cavity with iron and afterwards paint with collodion, at the same time giving strict injunctions as to treatment in event of bleeding coming on. On the seventh day she called to report "all well," and everything was as comfortable as could be wished. I examined the mouth and found the socket as I had left it, but without any fibrinous clot. I did not interfere with it, either with instrument or finger. On the following day (*the eighth from the operation*), violent hæmorrhage set in, which however yielded to simple plugging.

CASE 5.—Mr. B., æt. twenty-eight, a strong, powerfully-built man and an athlete, had eight roots of molars extracted, as they were causing him much annoyance, and as in contemplation of a holiday in the Alps he was anxious to go into active training. Their removal was effected at two operations, two days intervening between them. Nothing remarkable occurred at the time of the operations, or immediately afterwards ; but on the fifth day I was called and found him bleeding most profusely. He was in a very excited state in consequence of having just ridden in a prolonged cycle race. Three draughts, similar to those prescribed in Case 1, were administered with excellent effect. After cleaning the parts thoroughly, I covered the gums with Stent's composition, lining it with tannin and tragacanthæ, leaving the sockets *unplugged*. On the following day the plate was removed, and as I had the patient under my own immediate supervision, I did not reinsert it, the sockets being thoroughly filled with fibrinous medium. Recovery took place without further untoward symptoms.

The above recorded cases prove to my mind the great value of plates lined, as in the foregoing cases, with tannic acid and gum tragacanth, the latter being especially useful by the tenacity with which it retains the plates *in situ*, and brings and there holds the styptic in direct contact with the affected surfaces, and enables us to apply a steady and even pressure to the given locality required.

A Supernumerary Tooth of Unusual Interest

By R. WYNNE ROUW, L.R.C.P., M.R.C.S., L.D.S.Eng.,
ASSISTANT DENTAL SURGEON, GUY'S HOSPITAL.

AN interesting specimen of a supernumerary tooth came under my notice recently, in the Dental Department of Guy's Hospital. Obtained from the person of a boy *æt.* thirteen, it presents the following characters.

It is three-sided, the sides diverging widely above and converging below to terminate in the minute enamel-capped projection so characteristic of this class of cases; the extreme width of any one side, is $\cdot4375$ inch, greatest vertical diameter 8125 inch. The extent of surface covered by enamel varies, is greatest on the anterior face; when measured in a vertical direction it is $\cdot375$ inch (when *in situ* less than one third of the crown was exposed to view). The sides of the tooth having reached their greatest width shoulder off to end in a circularly depressed summit, in which are seen a few foramina for the nutrient vessels of the pulp. The interest attaching to the specimen is reached on making a section of the tooth; the whole of the original pulp cavity is seen to be now occupied by a calcified mass, which on dissection places is firmly adherent to the enclosing wall, but which on careful manipulation was completely detached, so as to lie kernel-like within the chamber. At first I took this to be a second supernumerary germ enveloped in the first, and although I have been unable, after examining microscopically both ground and macerated sections, to detect the existence of enamel, still the nature of the specimen may be assigned to this cause. Failing an explanation in the direction indicated above, one is inclined to the belief that the intermural mass is to be ascribed to a second deposit of dentine, and although the age of the patient and looseness of the enclosed bony substance are against this view, I am induced to give it the preference.

I have compared the specimen with similar teeth as existing in the museums of some of our hospitals, and can find nothing to equal it, either in symmetry of outline or in point of size. The characters, together with the relation borne by the mass to the contents, go to complete a specimen which may very fairly be regarded as unique.

MINOR NOTICES AND CRITICAL ABSTRACTS.

"The Lancet" and the Hyderabad Chloroform Commission.

ON another page we print Surgeon-Major Lawrie's letter containing details of His Highness the Nizam of Hyderabad's offer to place at the disposal of the *Lancet*, as the leading medical journal, the sum of £1,000 to send out a representative to repeat the experiments of the Hyderabad Chloroform Commission, and to make any others that we may suggest. This offer we have cheerfully accepted. There are many young men of great ability and thorough scientific training who could have done this work exceedingly well, but in accordance with the Nizam's desire that we should select a man who is not only a trained scientist, but one whose position and attainments will ensure the acceptance of his opinions by the profession, we have requested Dr. Lauder Brunton, F.R.S., to act as our representative, and he has consented to set out for Hyderabad on October 4th, which is the earliest possible opportunity. Dr. Lauder Brunton has not only devoted much time to pharmacological work for more than twenty years, his first contribution on the action of nitrite of amyl having appeared in our columns in 1867; but the fact that his large work on "Pharmacology and Therapeutics," which appears also in an American edition, has been translated into French, and is now being translated into German, Italian, and Spanish, shows that he is regarded as an authority in other countries as well as our own. It may, perhaps, be considered as a farther advantage that in this work Dr. Lauder Brunton has very decidedly stated that one of the dangers resulting from chloroform is death by stoppage of the heart. "Audi alteram partem" is the motto of an important section of the *Lancet*; and we think that by getting both opinions regarding the effect of chloroform on the heart represented on the Commission, as they will be by Dr. Lauder Brunton and Surgeon-Major Lawrie, we are more likely to obtain a correct conclusion. The question whether chloroform paralyses the heart or not is one of the greatest possible practical importance, for upon its correct solution the lives of thousands of people, and the happiness of thousands of families may depend. Both in Europe and America clinical experience and physiological experiments have led to the conclusion that it has a paralysing action on the heart, while ether

exerts such an action in a very minor degree, if at all. In consequence of this, ether is now largely used in this country and in America for producing anæsthesia in surgical operations in spite of the greater pleasantness and convenience of chloroform. It is almost impossible to believe that the conclusion arrived at by European and American surgeons and scientists have arrived at after all, destitute of foundation, and little better than a dream. When we find, then, that Dr. Lawrie and the Commission have arrived at an entirely opposite conclusion, it is natural that we should hesitate to accept it. A consideration of the report of the Commission appears to show that the number of experiments performed was not only large, but the results were uniform that the conclusion arrived at—viz., that chloroform does not paralyse the heart, but kills by stopping the respiration—may fairly be taken as correct for the animals experimented on under the conditions under which the experiments were performed. If we grant this we are at once confronted by the next question. Why do the results of the Nizam's Commission differ from those of European and American investigators? Is it because the experiments in India were carried on in a warmer climate? Is it because the animals experimented on were peculiarly susceptible to the action of chloroform? These questions can only be answered by further experiments, which can hardly fail to have practical utility, even if they afford only a partial solution of the problem. For Surgeon-Major Lawrie states in his letter which appeared in our issue of May 11th, that the results of the experiments carried out by the Commission tallied exactly with the results of our experience. In the correspondence which occurred on this subject in the *Lancet* some writers agreed with Dr. Lawrie, while others supported the opposite view. We may, perhaps, fairly divide the two views those of the Edinburgh and London schools. In the Scotch capital failure of respiration is regarded as the chief danger, while in the metropolis failure of the heart is more feared. It is quite possible that the surgeons in both cities are right, and that the habits or mode of living of the people may account for differences in the resisting power of the cardiac or respiratory apparatus respectively. The proportion of gouty patients is larger in London than in Edinburgh, and when we compare the natives of India appear to resemble the Scotch in their comparative immunity from cardiac paralysis by chloroform, it is advisable for the Commission to ascertain, if possible,

conditions are which enable the heart either in dogs or men to resist the power of chloroform or which lead to its stoppage during the administration of the drug. It may not be possible to work out completely all the questions which may arise, but if the Hyderabad Commission, with the aid of Dr. Lauder Brunton, can settle definitely the question whether chloroform does or does not affect the heart directly, a most important practical object will have been attained by means of the Nizam's generous offer.

THE HYDERABAD CHLOROFORM COMMISSION.

To the Editors of the "Lancet."

SIRS,—I am directed by his Highness the Nizam's Government to offer the *Lancet*, as the leading medical journal, £1,000 to send out a representative to repeat the experiments of the Hyderabad Chloroform Commission, and make any others with the Commission that you may suggest.

(1) The Hyderabad Committee performed a series of experiments of a clinical nature, on the effects of chloroform in dogs in 1888, and their conclusions were embodied in a report which was submitted to the Government early this year.

(2) The experiments of the Commission tend to prove that chloroform has no direct action upon the heart, and though it is hardly to be expected that their conclusions will be accepted as final by the whole of the medical profession, their work may be safely said to constitute an interesting addition to what is already known about chloroform.

(3) The Nizam's Government has been advised that if the experiments are continued and amplified by the Hyderabad Commission, associated with a trained scientist, whose position and attainments will ensure the acceptance of his opinions by the profession, the subject might be threshed out thoroughly, and the question whether chloroform does or does not affect the heart directly, and other questions connected with it, might be settled once for all.

(4) His Highness's Government therefore desires to offer £1,000, a cheque for which is forwarded herewith to the Editors of the *Lancet*, to send a representative to Hyderabad to repeat and continue the experiments of the Hyderabad Chloroform Commission, and make with them any others that the *Lancet* chooses to suggest.

(5) If his Highness's offer is accepted, the gentleman selected should take a return ticket by P. and O. *via* Brindisi for three

months, to be extended if necessary, and he will be the governor of the Nizam's Government during his stay in Hyderabad.

(6) The Hyderabad Commission undertake to place themselves entirely at his disposal and will act under his direction. The Commission will provide all instruments and appliances, and everything which may be required for the experiments, and will, without bias, do all in their power to assist the representatives of the *Lancet* in arriving at the truth.

I have the honour to be, Sirs,

Your most obedient servant,

EDWARD LAWRIE,

Surgeon-Major, Residency Surgeon.

Hyderabad, Aug. 18th, 1889.

—*Lancet*.

Death at the Commencement of Chloroform Inhalation.

THE following particulars of a recent fatality under chloroform are forwarded to us by a correspondent :—

"The patient, a woman; twenty-four years of age, married, and with a child, was having chloroform administered for the extraction of several teeth; she was reclining in a low easy chair, a cushion supporting the back to enable the head to be thrown well backwards, forty or fifty minims of pure chloroform being administered on a new piece of lint. The patient inhaled three times, when she slipped forward in the chair, her head dropping forward. The surgeon and dentist, assisted by the husband, who was present from the first, resorted to artificial respiration for about ten minutes, but without the least success.

"An inquest being held, a verdict of 'Death from syncope' was returned, exonerating all concerned from the least blame.

"The medical man assures me the patient's corsets were perfectly loose and every care had been taken; she had taken chloroform before for a confinement, and about three months ago he had carefully examined her heart, which he again did before giving her anæsthetic the day of her death."

A propos of this same case, the *Lancet* quotes another, which is of still greater interest, as follows :—

"Syncope, as has long been known, will result from any

violent emotion, and especially from the effects of fear. In a case recorded in Germany a few years back, a female patient visited a dentist, and requested him to extract some carious teeth, demanding, at the same time, that she should be chloroformed. The dentist very properly explained the risks of chloroform, and suggested nitrous oxide; but his patient persisted, and he consented to humour her. Having, however, a wholesome dread of chloroform, he substituted eau-de-Cologne, and bade her inhale the supposed anæsthetic from a folded towel. After two or three inspirations she suddenly fell from the chair, and died. That death occurs from fear in some cases during the earliest stage of chloroforming is unquestionable; and as it is predisposed to by the sitting posture, and by forcibly restraining the patient's voluntary movements, there can be very little doubt that in every case in which chloroform is to be administered, the recumbent posture should be insisted upon, and a loose dressing gown substituted for the usual workaday costume. There is another point of no small importance, which is that chloroform increases the liability to death from 'reflex syncope.' A person partly under chloroform is more prone to die from fright than one to whom chloroform has not been administered. Nor must it be forgotten that deaths occur when only one or two inspirations of chloroform have been taken; this is liable to take place when a too concentrated vapour (that is, one of greater strength than 4 per cent.) is employed. In the event of syncope occurring in one of the ways above indicated, the line of treatment which offers the greatest chance of success is total inversion of the patient, while care is taken that the rima glottidis is maintained patent for entrance of air. Dr. Chisholm, who has strongly supported this, Nélaton's original manœuvre, has recorded some highly instructive cases in which the method of inversion, being promptly performed, effected resuscitation, and so saved the patient's life. But here a caution must be given. Nélaton's method is valuable only in primary syncope, and is absolutely dangerous in cases of heart failure consecutive upon pulmonary engorgement and overfilling of the right heart; or, in short, when respiration stops before the heart ceases to beat. Cases belonging to this last category do not occur, as a rule, until the later stages of chloroformisation, and the respiratory failure is then due to overdosage with the anæsthetic."

Deaths under Chloroform.

The two following cases of death under chloroform have forwarded us from Ceylon :—

DEATH OF MR. H. P. THOMPSON AT TUAPEKA.

We regret exceedingly to have to record the untimely death of Mr. Harris Palmer Thompson under very sad and painful circumstances, full details of which appear below.

Coroner's Inquest.

An inquest was held before Coroner Revell and a jury in Court-house, Lawrence, on Thursday forenoon, touching the death of Harris Palmer Thompson, who suddenly expired on the previous day whilst chloroform was being administered to him preparatory to having some teeth extracted by Mr. Hunter, dentist. The first witness called was

D. BLAIR, M.D., who deposed as follows :—I was the medical attendant of the deceased, Harris Palmer Thompson. On the day afternoon deceased waited upon me to administer chloroform to him, as he wanted to get some teeth extracted. As the deceased had partaken of his dinner between twelve and one o'clock I advised him to allow the operation to stand over till next morning. Deceased and I then saw Mr. Hunter (dentist), and arranged for the operation to be performed at his (deceased's) residence at eleven o'clock on Wednesday morning. I afterwards requested the deceased to undergo the operation at Mr. Hunter's private consulting room at the Victoria Hotel, as it was more convenient. At about a quarter to ten o'clock deceased and I went to Mr. Hunter's room, where I carefully examined him, and found him thoroughly healthy—a fit subject to administer chloroform. The usual precaution was taken, and deceased's clothes removed. The deceased seated himself in an arm chair, two pillows placed under his head, thus allowing him to lie in a half reclining position. I began to administer the chloroform (using about thirty drops on a folded napkin), which deceased inhaled quietly. I spoke to him from time to time and felt his pulse whilst administering the chloroform very slowly. Deceased was cheerful and happy. Mr. Hunter held the bottle of chloroform and put a little on the cloth as I required it. When deceased was about half under the chloroform he began to struggle, and Mr. Wicks was called in to assist in restraining him. When the struggle began I was putting more chloroform on the cloth, but I immediately laid it aside on observing deceased's face becoming

rather livid. Thinking he was going to vomit I turned him on his side, but the breathing apparently, for the time, had ceased, and we laid him on the floor and began artificial respiration. I immediately sent for Dr. Withers and Mr. Harrop (chemist), and got the latter to get a galvanic battery, which was applied. I thought breathing was being restored more than once; but after carefully keeping up artificial respiration for upwards of an hour I saw there was no hope, life being extinct. From the livid appearance of the face and neck I considered an effusion of blood had pressed upon the brain. I have since assisted Dr. Withers in making a *post-mortem* examination. Extensive venous effusions were found on the brain; and when the brain was removed blood came welling out from it, indicating rupture of some of the blood-vessels near the lower and most vital part of the brain, causing death, in our opinion, from nervous apoplexy of the brain. The chloroform may have accelerated, but, in my opinion, was not the cause of death; any kind of excitement might have had the same fatal effect. Deceased had no breakfast, and I gave him a little brandy before administering the chloroform. An ounce and a half bottle of chloroform had been purchased for the operation, but only about half-an-ounce had been used. Deceased was not half under the influence of chloroform when he began to struggle and sneeze, and when I observed his face becoming livid. A few seconds before this I asked deceased how he felt; he replied a good deal better. At first he felt an irritation in the throat. I believe deceased died instantaneously, and before he was lifted from the chair. Deceased was passing into the second stage when the struggling began. The shock of extracting the teeth, even without the chloroform, might have had the same effect.

R. WITHERS, M.D., deposed: I have known the deceased for the past seven years. I last saw him alive on Tuesday. I was in the habit of seeing him daily. He appeared to be in good health. About 10.50 a.m. on Wednesday I received a message to go to the Victoria Hotel. When I arrived there I saw the body of the deceased. Mr. Hunter, dentist, was then engaged carrying on artificial respiration. The deceased's face was of a dusky colour and congestive. I could detect no signs of life. I continued artificial respiration, and injected ether under the skin of the deceased's neck, but there was no sign of returning animation. Deceased was quite dead. At about 7 p.m. the same day, with Dr. Blair's assistance, I performed a *post-mortem*. The veins in

the head were enormously congested with dark fluid ; were also the veins on the surface of the brain ; besides quantity of blood was lying free, as if it had escaped from some rupture. It would be impossible to locate any such rupture, the blood being clotted, and there being no tearing of the brain substance. The brain itself appeared healthy, as did also all the other organs of the body, the liver only being a little enlarged. I would consider the deceased a strong, healthy man. There was nothing in his appearance that would render him unfit for the administration of chloroform ; nor would examination of his heart indicate any disease. The sounds of his heart would be natural. There was nothing that should, during life, give indication of unfitness for the administration of anæsthetics, I should, with confidence, have given chloroform myself. I believe deceased died from congestion of the brain ; and that such congestion might have occurred during the exciting stage of the administration of chloroform. A person dying completely under the influence of chloroform would be more likely to die from syncope of the left ventricle of the heart—a failure which did not occur in this case. The left ventricle in that case would be dilated. The method adopted by Dr. Blair when administering the chloroform was the ordinary one. The quantity administered varies considerably, so that it would be difficult to specify for an individual case. The condition of the brain, as shown by the *post-mortem*, was not sufficient to account for death. When I arrived there was no smell of chloroform either in the room or about the deceased. A strong man will often take a larger quantity than would be retained in an ounce and a-half bottle. Witness stated that in many of the cases of death from chloroform at home, death resulted when the patient had inhaled but very little chloroform—anæsthetic—*i.e.*, in the first stage. Some people are so constituted that they are quite unfit to take it, although they are thoroughly sound and healthy ; they invariably succumb after inhaling a few breaths, and it takes them off so quickly that it is impossible to restore animation.

T. A. HUNTER, legally-qualified surgeon-dentist, deposed that deceased wanted four teeth extracted, but wished to go under chloroform, as he thought the pain would be so intense. Before administering to administer the chloroform Dr. Blair examined deceased and he did not seem at all nervous about taking it. After very little chloroform had been inhaled deceased commenced to struggle, and I then

was going to be sick. I assisted Dr. Blair to lay him on the floor, as breathing had ceased, and I assisted to produce artificial respiration. I have had considerable experience in seeing chloroform administered, and consider Dr. Blair was more than ordinarily careful.

WILLIAM W. P. HALL deposed: The deceased was my brother-in-law. I have lived with him for some time. He always enjoyed good health. He was thirty-seven years of age. The last time I saw him was on Tuesday night; he was then in perfect health. He was speaking about the operation, and was not at all nervous about it.

This was all the evidence.

The Coroner then summed up the evidence, and the jury, after a few moments' deliberation, returned the following verdict:—"That the deceased, Harris Palmer Thompson, met his death by apoplexy, accelerated by excitement, consequent on the administration of chloroform."—*Overland Ceylon Observer*.

DEATH OF MR. B. G. BEWLEY WHILE UNDER CHLOROFORM AT COLOMBO.

Mr. Bewley came down to the dental chambers of the Colombo Apothecaries' Co. about ten o'clock yesterday morning, accompanied by Mr. Farquharson, for the purpose of having five teeth extracted by Mr. Hume Purdie, the company's dentist, who is an L.D.S. of Edinburgh. He had expressed his desire to have the operation performed under chloroform, and Dr. Borrowman was expected to come and administer it. As for some reason or other he did not turn up, Dr. Garvin was sent for. He arrived about one o'clock, and preparations for the operation were at once commenced. The patient appeared to be in very good health, but in the course of conversation he said that a doctor in England had told him that the second valve of his heart was diseased, but that doctors out here had said he was all right. Dr. Garvin, in consequence of this, sounded him very carefully, and at the end of his examination said that chloroform might be administered to him. This he proceeded to do himself after due preparation had been made, such as the deceased taking off his coat and making bare his throat. The usual restoratives—ammonia, capsules of nitrate of amyl, &c.—were placed ready to hand in case of need.

The chloroform was measured, and a drachm was placed for deceased to inhale. He did so. Sickness followed. The doctor then waited till the patient had sufficiently recovered, giving him more chloroform. Vomiting, he said, was the result. As Mr. Bewley remained conscious he was given a second drachm, and as this had the desired effect, Mr. Purdie was instructed to commence his work. He inserted the mouth gag and endeavoured to get at a "wisdom" tooth, but it was not sufficiently open. He tried again, and could not do so properly, as the muscles had not then relaxed. Some more chloroform was administered, this time the dose not being measured except by the eye of the doctor. Mr. Purdie then proceeded with his work, but almost immediately noticed a change in the colour of the patient's face, and exclaimed to Dr. Garvin, "The patient is not breathing, doctor." The mouth gag was at once removed, and deceased's arms were worked, artificial respiration being tried for the space of three-quarters of an hour. At least half-a-dozen persons, one after the other, took part in trying to restore respiration, but all their efforts were unavailing, and the patient never breathed again. In the meantime Mr. Farquharson had gone out to try and find another doctor, but ultimately succeeded in coming across Surgeon Moir. It was then evident that Mr. Bewley's life was beyond hope, and a death certificate was communicated with. Three witnesses were called, viz. J. C. Farquharson, Dr. Garvin, and Mr. Purdie, to the effect that chloroform, lint, glass, capsules of nitrate of amyl and a mouth opener being produced at the request of the coroner, the evidence below.

At 5.30 p.m. the inquiry was adjourned till to-day to-morrow, a *post-mortem* examination being made. This was afterwards done on the spot by Dr. Macdonald and Dr. Keegel.

The following is a copy of the depositions taken by the coroner:—Inquiry taken at the Fort, Colombo Apothecary Company, on the 13th day of June, 1889, on the body of George Bewley, aged twenty-nine years, by me, J. C. Farquharson, Police Magistrate of Colombo.

J. C. FARQUHARSON sworn: I identify the body of George Bewley. His age was twenty-nine years. At the time he was accompanied by Dr. Garvin, who was attending to him, and accompanied him to these premises for the purpose of having a dental operation under chloroform. By the clock, at about one p.m., Dr. Garvin met us here. I came a minute

after the glass was put to his mouth. Dr. Garvin was holding the glass to his mouth. They continued administering chloroform till he became sick. He was still conscious. The doctor again administered chloroform. He coughed and again came to. Chloroform was again administered, when the doctor told the dentist he might proceed. The dentist then forced open the mouth and commenced to operate. The deceased coughed slightly and more chloroform was given. The gag was again applied. The dentist then proceeded and suddenly said, "He is not breathing, doctor." They pulled out the gag and began working his arms. I then went off to find another doctor. I returned with Dr. Moir. He gave some directions—quite in vain. The deceased was pronounced dead. The deceased was apparently in good health, a strong active man.—(Signed) J. FARQUHARSON.

Dr. GARVIN sworn: I am M.B., C.M. of Aberdeen. This afternoon I was requested by the deceased to attend here to administer chloroform for a dental operation. Before giving chloroform I examined him very carefully and I found him absolutely sound. I took every precaution against accident and had at hand restoratives such as ammonia, nitrate of amyl, &c. I gave him one drachm of chloroform to inhale—during the whole operation he consumed four drachms. I measured out the chloroform. Shortly after inhaling chloroform he became sick, but he quite recovered from the sickness. I administered chloroform again. When he was well under the influence of chloroform and being operated upon, he suddenly stopped breathing. I at once adopted artificial respiration and continued that treatment for about three-quarters of an hour without any result. The deceased told me that he had had chloroform before. I can only say that death ensued from sudden cessation of respiration. I don't know the cause. It is usual for patients to vomit under chloroform. It is not considered a bad symptom, nor any reason for refraining from further administration of chloroform. The deceased was not under chloroform more than the usual time. I believe I did not measure the last dose of chloroform. I poured the chloroform direct from the bottle on the lint. The bottle was handed to me by the dentist. I did not measure it, because I can pour off a desired quantity with sufficient accuracy. It is not usual to measure. A drachm more or less at the time would not have had a bad effect. I judged of the sufficiency of the dose by the effect made. By effect I mean the degree of insensibility. I

ascertained this by applying my finger to the ball of the the lids do not move, I am satisfied that a sufficiency of form has been given. The deceased was not being chloroformed more than twenty minutes. There was an interruption of minutes owing to sickness. The deceased mentioned to he had been examined by three doctors in Colombo and they had all pronounced him sound, but that a Dr. Page at home had told him one of the valves of his heart was diseased. This was before I administered chloroform. I am sure of the time. I say that from my experience it is unusually long.—(Signed) THOMAS F. GARVIN.

HUME PURDIE sworn: I am Licentiate in Dental Surgery, R. C. Edinburgh, 1882. I first saw the deceased this morning at ten a.m. An appointment was made at one p.m., at which Dr. Garvin attended. The doctor sounded the deceased. The deceased said that he had been examined by a doctor in Edinburgh who told him that his heart was slightly affected. Dr. Garvin then sounded him more particularly and concluded there was no danger. The doctor proceeded to administer the chloroform. The deceased took off his coat, loosened his trousers and opened his throat. When the doctor pronounced the deceased sufficiently prepared, I inserted the mouth gag, and I tried to pull out the wisdom tooth root. I found the mouth insufficiently open for the operation. I tried again with the same result. I then noticed the colour of the face. I drew the doctor's attention to it: but he had stopped. The muscles were hardly relaxed enough to open the jaw to open; owing to that a little more chloroform was given. I noticed that there was slightly more difficulty than in opening the deceased's mouth. The mouth opener is worked by a screw and is a powerful instrument. I cannot say exactly how much chloroform was in the bottle when I gave it to the doctor. I should say about an ounce. I got the bottle about a week ago.—(Signed) HUME PURDIE.

In continuance of the evidence offered yesterday, and recorded above, the following testimony was also taken by the coroner.

Dr. KEEGEL, sworn: I am Assistant Colonial Surgeon. I performed the *post-mortem* examination on the body of Mr. Benjamin Bewley identified by Mr. Farquharson. Deceased was a well-made man, about twenty-nine years of age. No signs of violence. I found the heart above the normal size and the chambers on both sides of the heart were full of blood.

blood. The left ventricle was hypertrophied or enlarged. One set of the mitral valves was thickened and partially adhering to the valves of the heart. Both lungs were congested, as were also the brain and the other internal organs. The stomach and bladder were empty. I am of opinion that the deceased came by death from asphyxia. The condition of the heart showed disease of the mitral valve with hypertrophy of the left ventricle. Asphyxia is the result of defective æration of the blood. The deceased state of the heart might have led to asphyxia. The condition of the deceased's heart as revealed by *post-mortem* examination shows that he was not a fit subject for the administration of chloroform.

Dr. MACDONALD sworn :—I am Medical Superintendent of the General Hospital. I was present yesterday when Dr. Keegel performed the *post-mortem* examination. I do not agree to what Dr. Keegel says in several points. I observed disease in the mitral valves, but that disease was fully compensated for by increase in the muscle of the heart, so that the heart would act exactly as a normal heart. I think the condition of the heart has no share in the causation of the death. As to the cause of death in this case it was entirely due to the paralysis of respiration caused by poisoning of the nervous centre, which presides over that function. Chloroform is a very common cause of such poison. There was no ascertainable peculiarity in the administration of chloroform, nor in the state of the deceased's organs. It is impossible for me to say why the nervous centre was so prejudicially affected in this case. Nothing of the condition of the heart would deter a medical man from administering chloroform. I agree with Dr. Keegel that the death resulted from asphyxia caused by chloroform.

Dr. KEEGEL : I simply stated the facts, and did not intend entering into pathological details, as to how death is caused by chloroform.

Mr. HUME PURDIE recalled, said : As far as I observed Dr. Garvin did not put or keep his hand on deceased's pulse at the wrist during the administration of chloroform. Whilst I was trying to extract the tooth, to the best of my knowledge, Dr. Garvin was holding the glass with lint and chloroform to the deceased's nose. I think that Dr. Garvin was feeling the pulse of the facial artery the whole time. The neck was bared for that purpose. It is impossible for a doctor to administer, and control the pulse at the wrist.

The coroner's verdict was as follows:—The evidence that the deceased voluntarily submitted to the administration of chloroform for the purpose of undergoing a dental operation, find that chloroform was administered by a duly qualified practitioner and that all necessary precautions were taken and served and that death resulted from asphyxia due to the administration of chloroform.—*Overland Ceylon Observer*.

Cocaine Poisoning.

DR. VINOGRADOFF, gives, in the *Ejenedelnaya Klinicheskaya Gazeta*, an account of the *post-mortem* examination in a known remarkable case of cocaine poisoning, where a woman who was suffering from a tuberculous rectal fistula, was given twenty-two grains of cocaine by means of repeated injections in order to produce local anæsthesia for an operation which consisted in scraping the anterior wall of the rectum with a sharp spoon. In a quarter-of-an-hour the patient became unconscious and began to suffer from clonic spasms in the limbs, opisthotonos, and cyanosis. Death occurred from asphyxia, in spite of tracheotomy and prolonged performance of artificial respiration. *Post-mortem* examination the blood was found to be fluid, of a dark brown colour, as in cases of poisoning with chloroform or potash. There were hyperæmia of the brain and of the lungs, exudative glomerulonephritis, evidently of long standing, with ulceration of the colon and rectum, reaching down to the submucous tissue. Microscopically, there was found albinism and degeneration of the nerve cells, of the cerebrum, of the striated muscle, of the liver cells, and of the epithelium of the renal tubules. Dr. Vinogradoff compares this with three other published cases of death from cocaine poisoning, and with cases in which large doses had been given with and without the appearance of toxic symptoms, and shows that as much as five grains have been borne without any ill effects. The fatality in the foregoing case—which, it may be remembered, was the suicide of the distinguished surgeon who operated—was ascribed to the increased power of absorption of the drug through the intestinal wall, and to the retardation of the kidney secretion on account of the diseased condition of the glomeruli. It would therefore appear that when there is any question of giving large doses

cocaine a careful examination should be made of the condition of the kidneys, and if there is any ground for supposing them to be diseased or functionally inactive the greatest caution should be employed. It may be remembered that before operating the unfortunate surgeon asked one of his colleagues, who was a professor of therapeutics, what dose of cocaine might safely be given, the answer being, "Not more than two grains." So that the greatest diversity of opinion exists regarding the maximum dose of the drug.—*Lancet*.

The Cocaine Habit.

BY ARTHUR P. LUFF, M.B., B.Sc.LOND.,

LECTURER ON MEDICAL JURISPRUDENCE AND TOXICOLOGY, AND WARDEN
OF THE COLLEGE, ST. MARY'S HOSPITAL; ASSISTANT PHYSICIAN
TO THE NORTH-WEST LONDON HOSPITAL.

THE following case of long-continued addiction to the use of cocaine, which lately came under my notice, will probably be of interest to the medical profession.

The patient, a gentleman, consulted me for a feeling of inaptitude for work, mental indecision, occasional palpitation of the heart, and dyspeptic symptoms. I ascertained that three years ago he had been recommended to apply a 5 per cent. solution of the hydrochlorate of cocaine to the nasal mucous membrane to relieve an attack of nasal catarrh, and that he had found the result so pleasurable that he had continued the application on and off for a period of three years, quite irrespective of any catarrh or affection of the mucous membrane of the nose. At no time did he abstain from the use of the cocaine for a longer period than two weeks, and he frequently employed it daily over a period of four or six weeks. As a general rule, he used up four or five grains of cocaine daily in the form of a 5 per cent. solution, although occasionally as much as eight grains were used in a day. The cocaine was always applied with a long nasal brush, the spray never being employed, and the mucous membrane of the nose was the only part to which the application was made. He informed me that at first the use of the cocaine produced some sleeplessness, but that this passed away after employing it for two or three months, and that he drifted into the use of the drug on account of the feeling of freedom from worry and the local and

general pleasurable sensations excited by it. The drug exerted no influence upon the sexual functions. During the latter half of the three years of its employment he had noticed a gradual increasing indisposition for work, together with a growing inaptitude for coming to a ready decision with regard to affairs connected with his business and daily life ; also a disposition to shun society. He felt that his general health was not so good as formerly, and he had been subject for the last two years to chronic constipation, together with occasional attacks of palpitation of the heart and slight dyspepsia. I pointed out to him the probable connection of his symptoms with the long-continued employment of cocaine, and strongly advised him to break himself of the habit, ordering at the same time a simple tonic and to employ abdominal massage with a four-pound cannon-ball for five minutes every morning in order to relieve the constipation. Six weeks later he informed me that he had entirely broken himself of the use of cocaine, although for the first week he suffered from great depression, and had a strong desire to return to it. He had entirely recovered from all his bad symptoms, his mental decision and powers of application to work being thoroughly restored.—*Lancet*.

Chorea Attributed to Poisoning by Iodoform

THE twenty-fifth annual report of the Jenner Hospital for Children in Berne contains a report of a secondary retropharyngeal abscess in a boy of six years, who was suffering from disease of the cervical vertebræ. Professor R. Demme opened this abscess and a second, which had reached to the middle of the sternal clavicle. A little iodoform bougie was introduced in the fistulous canal, and the wound dressed with iodoform powder and gauze. Three days afterwards the boy suffered from headache and complained of being sick, but the dressing was not changed, and a second iodoform bougie was introduced four days later, when convulsions began to occur gradually, passing on to chorea. Iodoform was then omitted from the dressing, and the chorea disappeared after a fortnight. A few weeks later another practitioner dressed the same case with iodol and iodol gauze, and a chorea appeared, lasting for three weeks.—*Lancet*.

ANNOTATIONS.

WE understand that the Society of German Dentists met at Kassel on the 15th and 16th ult. The main question discussed was whether the Society should resolve to form a union of guilds or a union of free societies, and the majority resolved to adhere to the former resolution of the Society and form a union of guilds. The Society numbers more than 300 members. Its next year's meeting will be in Leipsic.

THE paper on the "Title of Dentist," by Dr. Stack, of Dublin, published in our last issue, will we trust give rise to a good discussion in our pages. The first responses to the author's very clear reasoning we publish in this month's correspondence column. It is hardly for us to give any opinion on the merits of the question itself until the general feeling of the profession in the United Kingdom has made itself known in our pages. We may point out one fact, however, that the proposal will sound less strangely in Irish ears, because it is a usual thing in Dublin for surgeons to prefix the title of Surgeon before their name.

THE date of the next examination for the Licentiate'ship of Dental Surgery of the Royal College of Surgeons of England has been fixed to take place on the 4th, 5th, and 6th of November next.

THE Edinburgh Dental School opens the session 1889-90 on October 15th.

THE Post-Graduate classes in connection with the Edinburgh Medical School closed their fourth year on Saturday, the 12th October. The dental section was well attended and highly appreciated.

A DENTIST and chemist in Sydney, Australia, was lately found liable in £60 damages for detaining forcibly from twelve o'clock till eleven at night a female client, who refused to accept and pay for a set of teeth which she said "did not fit her."

THE *Bulletin*, the local comic paper, gives an illustration of the "dentist's DRAWING room," with the woman and the hideous *false* teeth, and the dentist with his back against the door, and the key—door-key—in his hand, and asks "Is this a case of lockjaw?"

A BALLARAT correspondent, who feels the want of the L.D.S., writes:—"I am glad to note that we have now a Dentists Act passed in Victoria, which provides for the registration of dentists qualified to practise in Victoria. This is a step in the right direction and is helping very considerably to improve the status of the profession."

A MOVEMENT is now in progress to establish a dental hospital at Melbourne. This country bids to be a grand field for dentistry, as the native-born children are rarely to be seen with sound teeth.

DR. LAUDER BRUNTON has gone to India to assist in a repetition of the experiments and investigations of the "Hyderabad Commission on Chloroform." His report will be looked forward to with interest by the whole medical and dental profession, and more especially by those who assisted at the anæsthetic discussion at our Brighton meeting.

SPECIAL attention is called to the report of the recent fatal gas case in Edinburgh, for which see page 689.

THE next meeting of the International Medical Congress will take place at Berlin on the 4th of August, 1890. It is expected that the Dental Section will be of more than average interest.

A CORRESPONDENT, Mr. Arthur Drake, of Carlisle, has kindly forwarded us a letter from a well-known practitioner in Tasmania, which contains much information that cannot fail to prove useful to any of our members who meditate wandering in search of new fields of enterprise. From the following extracts the reader may be enabled to form a fair idea of the condition of the dental profession in the new world: "Of course we, the Colonial dentists,

are improving, or trying to improve our status. Victoria, New Zealand, the Cape and Tasmania are protected by Acts of Parliament, based upon the lines of the English Act, *i.e.*, compulsory registration, &c., and there is an Odontological Society of Victoria which meets in Melbourne, and no doubt in time matters dental will be very much better. Advertising dentists, low fees, show cases and other paraphernalia are much too plentiful, and the Colonial public are just as fond of being gulled as the British. Launceston has about 12,000 inhabitants and eight dentists. I believe a man with health, energy, well up in his profession all round, and not afraid to rough it if necessary, and with a small capital, would do well in the Australias. I do not think there is a great demand for assistants, as the majority of practitioners do their own work. Salaries vary according to a man's capabilities. A really good assistant should command from £200 to £250; others 30s. to 40s. per week. I certainly would not advise anyone to come out on spec. unless with private means. The best way to get a situation would be to advertise in the dental journals, also the *Melbourne Age*, *Argus*, *Sydney Morning Herald* or *Tasmanian Mercury*, giving full particulars. For particulars *re* the Tasmanian Act see Walsh's Tasmanian Red Book, procurable from W. Braddon, Esq., Agent-General for Tasmania, in London. Any one coming out should not neglect to bring with them all the references, testimonials and introductions they can get—these are essential.”

OUR attention has been called to some errors in the advertisement of the London School of Dental Surgery in our September number. The advertisement appears corrected in our present issue.

WE would recommend all our readers to study carefully the very interesting cases of hæmorrhage recounted by Mr. Pillin under the heading of “Cases in Practice.” They are very remarkable and most instructive.

STATEMENT of operations performed at Dental Hospital of London during the months of July, August and September, 1889.

	July.	Aug.	Sept.
Extractions :			
Children under 14 ...	410	462	473
Adults	2000	1016	1013
Under Nitrous Oxide ...	867	738	751
Gold Stoppings	345	110	119
Plastic Stoppings	1186	578	582
Advice Cases and Irregularities of Teeth	233	145	180
Miscellaneous and Dressings ...	304	240	285
Total	5345	3289	3403

A. HOPEWELL SMITH,
A. R. COLYER,
F. C. PORTER. } *House Surgeons.*

STATEMENT of operations performed at the National Dental Hospital during the months of July, August and September, 1889.

	July.	Aug.	Sept.
Number of patients attended ...	1935	1886	1870
Extractions :			
Children under 14 ...	240	381	370
Adults	450	625	532
Under Nitrous Oxide ...	891	877	671
Gold Stoppings... ..	98	61	77
Other Stoppings	406	323	413
Advice and Scaling	414	419	235
Irregularities of the Teeth ...	119	58	47
Miscellaneous	112	122	180
Total	2730	2866	2525

EDGAR A. H. FIELD, *House Surgeon.*
FRED. A. HUET, *Assistant House Surgeon.*

STATEMENT of operations performed at the Victoria Dental Hospital of Manchester during the months of July, August, and September, 1889.

		July.	Aug.	Sept.
Number of Patients attended ...		1159	901	1098
Extractions :				
Children under 14	}	698	759	779
Adults				
Under Nitrous Oxide ...		134	88	67
Gold Stoppings... ..		85	48	31
Other Stoppings		149	49	121
Miscellaneous		284	228	345
Total		1350	1172	1343

CHARLES H. SMALE, *House Surgeon.*

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our Correspondents.

Dr. Stack's Paper on the Title of Dentist.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—I have carefully perused Dr. Stack's paper on the above subject, read at the annual meeting of the Irish Branch, and, much as I respect Dr. Stack, I must say that I think his suggestion is a terrible one—nay, more, it is going back to the dark ages, when a man was named according to his vocation, &c.—smith, carpenter, turner, and so forth. It has moreover its comical aspect.

From time immemorial the dentist has been lampooned—as witness the old woodcuts and other engravings, and even the "skits" in the comic papers of the day. Fancy a reception, and a practitioner heralded by Jeames de-la-Plushe thus—"Dentist Jones-Tompkins!" You can imagine the kind of sensation such an announcement would make.

The big title of dentist would frighten timid ladies. They would be afraid to open their mouths in presence of that expert, lest he might be a sort of "chiel amang you takin' notes" of their dental deformities or artificial perfections. What an unpopular man *Dentist* Jones-Tompkins would be, say at a stiff dinner party! And suppose he had some old patient in the room for whom—once in a way—he had broken a tooth in his efforts to remove it, and the patient a

bit of a wag. You can imagine the patient's revenge as he whispers slyly to his neighbour, "Alexander the Coppersmith did me much evil ; the Lord reward him according to his works."

There is nothing whatever to be ashamed of in *being* a dentist ; on the contrary, if a man conducts his practice in a legitimate and honourable way, I distinctly wish to state that he is a contemptible fellow if he is ashamed of a calling which has made the names of so many good men ; but, somehow—it is no use blinking the question—the titles Doctor Smith and Dentist Smith have wholly different *sounds*.

Moreover, *why* should we prefix this title to our names at all ? It has surely served all purposes in times past, for men in our profession to rank in society as private gentlemen, and what more does any dentist, or doctor, or lawyer desire ? If it must be used on a doorplate by all means let it be Mr. Jones-Tompkins, dentist, and not Dentist Jones-Tompkins—a title that, to use Hood's humorous lines :

"Would make a doorplate blush for shame,
If doorplates were not so brazen."

In social circles we meet with men of all callings. If Dentist Jones-Tompkins—why not lawyer, architect, banker, not to say stock-broker, manufacturer, brewer, or anything else you like to think of?—all vocations of men we are proud to meet in social life on an equal footing, and yet who would as soon think of flying as of *prefixing* their vocations to their surnames. There is a wide gulf between this and the men who, while they practise as dentists, are ashamed of their calling. There are but few such men going about, but I believe that there are many who share my views, and I regret that I was not present at the Irish meeting to listen to the discussion on this paper of Dr. Stack's, which would appear to be written in order to *promote* discussion.

Coming from his pen, there is much that is worth reading, doubtless, but I am wholly at variance with "Dr. Stack" if he thinks that his name would sound as well—Dentist Stack.

"A rose by any other name would smell as sweet," says the poet. I doubt it. Call it garlic, and see how many would wish to test its odour.

I am, &c.,
E. M. TOD.

Nitrous Oxide and Oxygen.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—Perhaps it may be interesting to those who are waiting to hear further of the new mixture, N_2O . and O ., if the experience of those using it were notified in our Journal. I therefore give you mine as follows. During the last three weeks I have given G . and O . in twenty-five cases, using an ordinary Coxeter's gasometer of seven

gallons capacity with an extra inlet pipe for the oxygen, and the cylinder marked for the quantities, using pressure to force the gas through the face piece. The results in all the cases have been good, the anæsthesia being perfect, except in two cases in which I was operating for fifty seconds. In no other case was there any pain. In only one case have I heard of unpleasant symptoms following, viz., a patient with weak action of the heart, who felt very faint during the afternoon and night. Amongst those who took it was an epileptic, who has for two days following shown no sign of harm. I have extracted from one to six teeth without the slightest consciousness. The symptoms agree with Dr. Hewitt's account exactly; the colour hardly changed, the breathing becoming gradually quieter. In two cases there was slight stertor. The arm soon became relaxed, the cornea remaining sensitive, with but one exception. The inhalation occupied from thirty to one hundred and fifty seconds, varying according to age, sex, &c., as under gas; the average duration of working anæsthesia being thirty seconds, and varying from fifteen to fifty seconds, the amount of gas inhaled ranging between four and fourteen gallons—average, eight-and-a-half gallons. Admission of air interferes most seriously, but I had no failure when the face piece was close. Messrs. Coxeter supplied me with oxygen, and I have not yet used seven feet (as condensed into a hundred gallons gas bottle). I should like to mention the immense comfort of working with their regulator when there are two bottles to attend to.

Hoping to hear from others on this very important subject, and with many thanks to Dr. Hewitt for his most valuable contribution to our aid,

I remain, yours truly

J. W. DENT.

*1, Wood Street, Bridge Road, Stockton-on-Tees,
October 3rd, 1889.*

"Sullivan's" Amalgam as a Filling.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—I was pleased to find a gentleman demonstrating root filling (after usual preparatory treatment), at the interesting annual gathering of the British Dental Association, commence by filling with copper amalgam, as it has been my usual practice for many years past. Of the durability of the so-called "Sullivan's Cement" there can be no question. In fact, I came across some filling I inserted quite forty years since, when practising at Exeter. Quite fifty years since, in my late father's practice, we used to make the stopping generally known as Sullivan's since as follows:—Pound two ounces

sulphate of copper in a mortar. Dissolve it in eight ounces of cold water ; see that it is all dissolved, if not, add a little more water, or decant off the clear blue liquor. Pour it into a tallish glass (soda water glass will do) and hang two strips of sheet-zinc inside. The copper will be precipitated in a bulky mass, and the solution will become clear and colourless ; jog the bits of zinc up and down now and then, to separate the copper freely. Now pour off the fluid (sulphate of zinc), and water the copper precipitate two or three times, letting the copper fall until the water comes off clear. Drain off the water and add a few drops of oil of vitriol slowly, to dissolve any zinc which might have been detached and fallen. Wash again and drain. Put the copper precipitate into a small mortar with a big pestle, and add one ounce of quicksilver, and triturate well under a little water. Pour off and rub up again, and continue this until the water remains almost clear, losing all milkiness. In fact, the copper must form a perfect amalgam with the mercury. Now put the paste into a bit of wash leather and squeeze out as much mercury as possible by twisting, pinching with a pair of pliers, &c. ; quarter of an ounce of quicksilver or more will be left for another lot. Make up into pellets in the palm of the hand. They remain soft for about twenty-four hours, then lose all shine, and are ready for use (one ounce and a quarter can be made for threepence farthing, if you go the right way to work in buying the materials). I think it doubtful if the washing now so very much recommended in acid, sal volatile, &c., &c., is conducive to the value of the antiseptic properties of the filling. The sulphate of copper may be got at a grocer's, for twopence per pound. A chemist would charge perhaps a penny the ounce. Good mercury we used to procure from a barometer maker. The bit of zinc will be given you by any plumber or tinman. Nothing else is required but brains and hard work from the elbow.

OCTAVIUS A. FOX, L.D.S.Eng.

Brighton, September 28th, 1889.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

Subscriptions to the Treasurer, 40, Leicester Square.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE.—All communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

No. 11.

NOVEMBER 15, 1889.

VOL. X.

The New Regulations for the L.D.S.England.

THE new regulations for the Licentiatehip in Dental Surgery of the Royal College of Surgeons of England, which are to take effect from January, 1890, will be found on another page. And from a perusal of them it will be seen that some rather important alterations were made in the dental curriculum at the Meeting of the Council held on Thursday, the 14th inst. The tendency of these changes will be to bring the dental curriculum more into accord with the first part of that for the conjoint examination for the M.R.C.S. and L.R.C.P., and thus place the dental student, as far as the first half of his studies are concerned, on a complete level with the general medical student. This we need hardly say has always been the desire of those who are engaged in promoting dental education. It will be possible under the new *régime* for the dental,

like the medical, student to receive instruction in chemistry, practical chemistry, and materia medica before going to the hospitals and previously to registration.

The whole of the required three years' mechanical work will be allowed to be done before registration ; but this will not reduce the four years' professional work required subsequently to registration. The following additions and alterations have also been made :—

One course of lectures on anatomy will be required instead of two, twelve months' dissections instead of nine months', and a three months' course of practical physiology ; these, it will be noticed, are identical with the requirements for the conjoint diploma. The remainder of the dental curriculum is unchanged.

Under the head of Examination some changes will also be noticed. It now reads as altered : "At the practical examination candidates may be examined (*a*) on treatment of dental caries, and be required to prepare and fill cavities with gold or plastic filling, or may be required to do any other operation in dental surgery ; (*b*) on the treatment (mechanical and surgical) of the various irregularities of children's teeth ; (*c*) on mechanical dentistry."

It is further provided that candidates who have passed the second examination in anatomy and physiology of the Examining Board in England, or its equivalent in Edinburgh, Glasgow, Ireland, or at a university in the United Kingdom, will be exempt from re-examination in these subjects. Also that those who have passed in surgery at any of the aforesaid places will *not* be re-examined in general surgery and pathology. Under these new regulations increased facilities are given to dental students, more time can be expended at the hospitals in acquiring practical knowledge and mastering the details of anatomy and physiology, and the time that was devoted to chemistry

and materia medica can be spent in acquiring more experience in operative dentistry.

We cannot urge too strongly upon all who are still undergoing their mechanical apprenticeship the importance of getting through, during their pupilage, those subjects which can be taken up before entering the hospitals.

If the freely expressed opinion of those in authority may be taken as an indication of future changes, the time may come when the Royal College of Surgeons of England will require of those who present themselves as candidates for the dental diploma that they should have passed the first and second professional examinations for the conjoint diploma, and such a requirement would not entail any increase of work upon the dental student. Under such circumstances re-arrangements would become necessary at the dental hospitals, both with regard to the hours during which they are to remain open, and the staff required to supervise their labours.

ASSOCIATION INTELLIGENCE.

West of Scotland Branch.

AN ordinary meeting of the West of Scotland Branch of the British Dental Association was held within the library of the Faculty of Physicians and Surgeons, St. Vincent Street, Glasgow, on the evening of Thursday, 24th October, 1889, Mr. JAMES CUMMING, President, in the chair.

After some formal business, the Hon. Secretary stated that the Committee appointed at the February meeting reported that power has been taken under the Universities (Scotland) Act, 1889, for the creation of new degrees with the sanction of the Commission appointed under the Act.

Mr. William Wallace, M.A., M.B.C.M., L.D.S. (Glasgow), and Mr. John Dunlop, L.D.S. Eng. (Kilmarnock), were proposed for membership of the Branch.

Mr. BROWNIE introduced the discussion of the question of

the discolouration of teeth by amalgam stoppings, and why it occurred in some cases and not in others. He said : I have no intention of going over the whole subject of palladium amalgam. I am not here to champion this amalgam, or express any opinion upon it whatever. I have no improved method of amalgamating the metals or applying them to the cavity. I dare say every member of the profession, who is careful to observe what passes under his notice, must have seen cases where amalgam has been in use—I don't mean specially palladium—for a length of time, and where the tooth has been in no way discoloured. Such cases are decidedly exceptional with most amalgams. In the case of palladium it is rather the rule. Occasionally the palladium amalgam blackens the tooth into which it is introduced as much as any of the other binary compounds which are noted in this respect, and I want you now to consider whether we have evidence sufficient to arrive at any understanding or correct interpretation of the influence which is at work, and which is evidenced by the discolouration in one case, and the preservation of the colour of a tooth in another. Palladium has been selected because it is in many respects the most marked specimen that we have. It possesses characteristics in a degree which make it to stand out from all the others. It hardens rapidly—some say too rapidly to be of any use. It preserves the colour of the tooth in a wonderful way. But after we have gone over and enumerated all the special features for which it is noted, we must come to the conclusion that it belongs essentially to a class of compounds and shares directly in almost every property possessed by the other members of the class. For instance, if we want to make out a list of the amalgams in the order in which they preserve the colour of the tooth, we place palladium first, but every amalgam we have deserves a place on such a list. If we have regard to the rapidity with which amalgams harden, we would place palladium first, and go through the others according to our estimate of the time they take to harden. In each enumeration palladium has a place. Its differences are not of *kind* but in *degree*. I draw attention to this because we have here a title to believe, that though we cannot well apply to palladium amalgam the methods of direct investigation which have sufficed for others, it most probably shares in the characteristics thus brought to light. What the influence at work is, which determines whether a tooth shall be discoloured or shall retain its colour under palla-

dium or any other form of amalgam we might not agree upon. What we do know and recognise is the result—the discolouration—and I should like to ask your attention for a minute or two to this subject of discolouration as it is evolved in the use of some of the other agents we employ. We have a class of agents familiarly known as white cements. They deserve the term, because they act to some small extent as cements adhering to the walls of the cavity. If anyone present has recognised, or has suspected, or has read of such a thing as an alteration in bulk during hardening, in any one member of this class, I would be very glad to know of it, because I place very considerable importance upon the fact that with this class of agents we have no such thing as discolouration, even if the operation be but moderately well performed. It is a thing which we can rely upon absolutely, that in the use of any of this class of agents the colour of the tooth will be perfectly preserved. Then we have another white filling which is occasionally in use—gutta-percha filling. Gutta-percha is a somewhat elastic body, and is really somewhat difficult to use. As a consequence we find that while some of the teeth into which it is filled retain their colour, a proportion of them discolour. It is not a black discolouration, but it is sufficiently marked and recognisable. In the case of gold we have direct evidence upon this part of the subject, inasmuch as we know, from the outset sometimes—not always, but sometimes—which tooth, or which part of the tooth, will discolour. Possibly the filling has moved somewhat during the operation. The movement has not been observed, and there is a defect along one of the walls. The rubber is taken off, and immediately we have a lowering of the colour, and unless the defect be repaired we have the certainty that in course of time that tooth will blacken. We have all at least seen gold fillings which have preserved absolutely and for many years the colour of the tooth, and we have also seen gold fillings which have not.

Here we have a direct connection between cause and effect; we have recognised that a defective filling gives rise immediately to a lowering of the colour, which ultimately ends in the blackening of a part, or it may be of the whole, tooth. Neither of these agents contribute any stain. With amalgams there is a stain contributed which materially adds to and deepens the discolouration. There is perhaps no agent we employ which is more easy of perfect application than amalgam, speaking generally; it is the

easiest of all the agents we use to apply, and I have no doubt that, to begin with, the great bulk of such fillings are perfect, and that they fill absolutely the cavities into which they have been introduced. But we know for certain that in every case, unless it be palladium only excepted, the filling is interfered with by the contraction of the mass in the period between the plastic and the hardened condition. Thus a defect is brought about, and an opening is made to the outside. The tooth discolours, and the stain obtained from the material itself deepens the discolouration.

Thus, then, it appears that there is a very close and intimate relation between an imperfectly filled cavity and a discoloured tooth. Wherever we have the knowledge that the filling is imperfect, we have the prospect, and we will by-and-by have the reality, of a discoloured tooth. I said at the outset that most men who had been careful to notice what came under their observation must have seen cases where amalgam—I don't care what form, I include them all—has been in use for a length of time, for years, and has left the tooth quite unstained. Now, we know that amalgams shrink (unless it may be palladium), and we have seen how closely defective filling is related to discolouration. To what, then, is the preservation of the colour of such teeth due? It may be explained in at least two ways: First, shrinkage usually separates the amalgam from the walls of the cavity, but there is no necessity that it should always do so. In some of the tubes I filled with amalgam many years ago, when studying this subject, the *end* of the specimen showed almost no contraction; throughout its *length*, however, the contraction was quite apparent. We have familiar examples of contraction taking place at a particular spot, without affecting the form of other parts in the metal dies and counters we are casting daily. In some such way contraction may occur without spoiling the filling. Second, it is usual to caution patients not to eat for some time after filling a tooth with amalgam. The caution has not always been observed. If the cavity wanted a wall, the result would be disastrous, but if the walls were good and sufficient all round the effect would be to condense the recently shrunk or shrinking amalgam and the production of a perfect plug. There is something to be said about the period at which the shrinkage occurs presently. That this is a probable explanation, I would submit some direct evidence, obtained about the time already referred to, where, by varying the form of the cavity so as to bring the shrinkage to our assist-

ance, we could make not only a water-tight plug, but an absolutely air-tight plug. I think I demonstrated the matter at a meeting of the Odonto-Chirurgical Society, and, if I remember rightly, passed over to Mr. Wilson, who was then curator of the museum, a specimen of such a filling, and the appliance for testing it. It was simply the method employed in some forms of rivetting, where the rivet-head on one side projects, and on the other there is no projection, the plate being counter-sunk. In the same way, by enlarging the base of the cavity and counter-sinking the upper part of it, the amalgam was fixed in the lower part of the cavity, and as it shrunk the upper part was drawn into a diminishing cavity, and so kept in perfect contact with the walls. Such specimens have been placed over a column of water between two and three feet in length without the water falling a hair's breadth. This, taken in connection with experiments upon cavities formed in the ordinary way in which the water fell freely through the passage of the air, made it perfectly clear that shrinkage could be taken advantage of in this way, and made to produce a perfectly air-tight plug. This form of cavity can easily be given to all simple cylindrical cavities, and—although it is not my habit to use amalgam in such cases—has been used by me frequently for patients who demurred to the cost of gold, or for other reasons, and with most satisfactory results. Some of these cases have, through removal to a distance, passed into the care of other practitioners, some of whom have written to ask what *form of amalgam* I had used. From all these considerations we may go the length of saying that discolouration is directly dependent upon shrinkage, or, I should say, imperfect filling, whether it be shrinkage or not. A cavity imperfectly filled, under the influence of thermal changes leads to the entrance of moisture, and discolouration ensues. It might be supposed that as the tooth is not a perfectly dry body, but contains moisture throughout its whole substance, we must make an allowance for the presence of this moisture in the tubuli. If the cavity is opened up properly, we have of necessity the cut ends of very many tubuli opening into it and containing moisture. What influence has this? If we refer to the results obtained with palladium amalgam, it has absolutely none. So also where gold is successfully applied. The moisture which the tooth contains is inoperative. It is moisture from without which effects the change. The opinion has been expressed, and is still held by some, that palladium does

not shrink, but if palladium does not shrink, we should not have cases of discolouration. To assume that palladium does not shrink, and to leave such blackening unexplained, seems to throw the responsibility for its occurrence upon the operator—a position which we are hardly entitled to assume, where a man is at the cost of obtaining, and is at the trouble to work this costly and untractable material. We know that palladium hardens very rapidly. It is the most rapid hardening amalgam that we know of, and it is a fair question—Can this have anything to do with the matter? I think it has. In the paper in connection with which the experiments already referred to were made—a very old paper in the history of amalgam ten or twelve years ago is quite out of memory—but in the paper to which I have already referred, my attention was arrested in working out these experiments by the regularity with which the shrinkage took place. Having subsequently verified this observation, I put it on record that within one-third of the period which the material takes to harden, and in the first third of it, the greatest amount of shrinkage takes place. Recently Dr. St. George Elliot, going over the same ground, has arrived at precisely similar results. Well, then, in view of this corroboration, let us apply this finding, since we have it now on the evidence of two witnesses. Has it any bearing on the subject on hand? Why, if palladium is hard by the time the operator has completed his filling, the shrinkage must be over. In one-third of the time it takes for the material to harden the greater part of the shrinkage is over, and by the time it is hard the shrinkage has been reduced to the extent of being scarcely perceptible. It is, perhaps, only natural that during the period of greatest plasticity the movement should be greatest; at all events, it suggests very strongly that while the material is being filled into the tooth it is undergoing contraction, and that the bur-nishing of the material takes place, not as in all other cases on a filling which has yet to contract, but on one which has already contracted. This, should it prove true, explains the successful cases where the colour of the tooth is perfectly preserved. But what about those that have discoloured? We can suppose that the operator is in a somewhat happier frame of mind. The cavity is a little more accessible and the patient is a good one, and, as a result of this combination of favourable circumstances, the filling is introduced more rapidly than usual. That is before the

shrinkage is quite over, and, as a consequence, that which remains suffices for the blackening of the tooth. As the whole is greater than its part, if that which remains suffices for the deep discolouration of the tooth, a discolouration as marked as with any of the other binary compounds, it looks as if, when we come to know for certain that palladium amalgam shrinks, and to measure the extent of the shrinkage, we will have to admit that palladium not only shrinks, but shrinks badly. At all events, I may claim for this explanation that it accounts for both aspects of the question, and it does not lay the responsibility of failure upon the operator, seeing that the case is not one where there is very much room to err, and it does not necessitate making palladium an exception to a natural law, which we know to prevail in every other instance, in every other member of its class, where we have an opportunity of putting it to the proof.

Mr. WOODBURN was under the impression that excess of mercury in an amalgam filling was a common source of discolouration of the tooth filled, but this was not apparently borne out with regard to palladium, where a large excess of mercury was required to utilise it as a filling material.

Mr. WILSON agreed with what Mr. Brownlie had said, and he had no doubt that the sole reason why palladium did not discolour was the fact that it was put in while hardening, and he thought that with almost any of the other amalgams, if they harden at all rapidly, they would have the same results. The more plastic the material is, there is the more certainty that failures would follow. As regards the idea of the palladium amalgam not shrinking, he thought it was simply absurd. There can be no doubt it does.

As regards the quantity of mercury, different metals combined in different proportions. It was the rapidity with which the amalgam hardened that affected it. The reason why a large excess of mercury was used was that if palladium were only mixed with a small quantity the combination was dangerous, and the surplus mercury had to be therefore squeezed out. Being a binary compound you leave nothing but palladium and mercury in the filling, and it was purely for the safety of the article that the large quantity of mercury was used.

Mr. BIGGS said he was under the impression that palladium, either pure or in combination, had been abandoned long ago by the makers and the profession, and he did not think at the

present time there was anyone who had the courage to make further experiments with it as a filling material. Some of our best modern chemists have experimented with palladium pure and in various combinations, such as silver, copper, tin, &c., and principally with the view of reducing the rapidity of its setting. Wherever they succeeded in reducing its setting power the filling proved the more faulty, but wherever palladium alone was used the rapidity of setting was so intense that the cavity could not be properly filled, and he believed that in the majority of cases it could not be successfully used.

If the coffer dam is applied to a tooth, the carious dentine be removed, alcohol applied to the cavity and hot air used to dry the cavity thoroughly, there could be no doubt, especially if the cavity be varnished, that the after discolouration would be reduced to a minimum. There will be found in all amalgam fillings a tendency to a change of form, however carefully they may have been condensed. His experience of palladium was so far back, and his memory so short, that he could not enter into detail, but he could distinctly recollect several failures with palladium fillings. The time required to fill certain cavities and mix the filling was too great for its setting capacity. He endorsed Mr. Brownlie's remarks that the best results were obtained by burnishing it and condensing it until set.

Mr. JAMES CAMERON had never used palladium as a filling, and had little knowledge of it. He believed there was a great future for amalgams if the matter were only worked out scientifically. At certain times in making his own amalgams he had by chance made certain combinations which had stood the tests of shrinkage and discolouration; and he saw no reason why a combination of metals might not be made to form an amalgam suitable for stopping teeth that would last quite as well as gold, and be non-shrinkable and not discolour.

Mr. OSWALD FERGUS pointed out the great difficulty of obtaining palladium, but he believed with suitable matrices, a very good filling might be obtained with it.

Mr. REES PRICE had had very little to do with palladium as a filling material, and he thought that the chief value of Mr. Brownlie's observations lay in their applicability to the causes of failure of compound amalgams. He had long held the opinion that shrinkage and discolouration would be reduced to a minimum provided a quick-setting amalgam were used under proper

conditions as to the proportion of mercury to filling. They were precluded from discussing amalgams in general, but he thought Mr. Brownlie's remarks were entitled to great consideration as explaining the difficulties and failures every one had experienced when using compound amalgam fillings.

The CHAIRMAN differed from Mr. Brownlie in believing that the best result was obtained in working in an amalgam while setting. He thought that no amalgam should be disturbed while hardening; greater uniformity was thus obtained. In respect to discolouration, he thought it was due to the thinness of the walls of the tooth cavity, and the staining of tooth substance due to the action of the filling on the dentine. The Society were greatly indebted to Mr. Brownlie for his observations.

Mr. BROWNIE, in reply, said: If my remarks should be the means of attracting more attention to the subject, I shall feel quite rewarded for any effort I have made in the matter, but at the same time I am exceedingly conscious that want of preparation has told very seriously against the manner of putting the case, and if I had had the opportunity of writing it, I could have been more brief and more pointed, and made the subject much clearer. I am very much gratified to find, notwithstanding, the idea I have tried to place before you has been adhered to by some of the speakers, and an effort made to single out the main features of the case and to express an opinion thereon.

Palladium amalgam is so little used that the question whether it does or does not shrink in hardening is of but limited importance. It seemed to me a convenient aid in considering the other problem of discolouration, a problem the solution of which will clear the way to a more effective and intelligent use of the many forms of amalgam we at present possess.

Votes of thanks to Mr. Brownlie and the Chairman brought the meeting to a close.

The Annual General Meeting of the West of Scotland Branch will be held within the Grand Hotel, Charing Cross, Glasgow, on Thursday, November 28th, at 5.30 p.m.

Notice has been given of alteration in Rules X. and XII.

Rule X. will read, as altered, "The officers of the Branch shall consist of a President and Vice-President, Secretary, Treasurer, Librarian and Editor of Transactions, who, *with the members of*

the Representative Board for the West of Scotland Branch for the time being, and with four other members, shall constitute the council.

Rule XII.—The meetings of the Branch shall be held in Glasgow, on the fourth Thursday of October, November, *December* (to be omitted), January, February and March, at 8 p.m. The Annual General Meeting shall be held either in Glasgow or such other town and at *such date* and hour as the Council may determine. (Alterations proposed in italics).

Ballot for membership will be taken for William Wallace, M.A., M.B., C.M., L.D.S., Glasgow; John Dunlop, L.D.S.Eng., Kilmarnock.

The report of the Secretary and Treasurer will be read and be open for discussion.

Office bearers for 1889-90 will be elected.

Members and friends will dine together in the Hotel at 6.30 p.m. Dinner tickets, 6s. each (without wine).

REES PRICE, *Hon. Sec.*

Meeting of the Midland Branch at Halifax.

A MEETING of this Branch was held at the rooms of the Literary and Philosophical Society, Halifax, on Saturday, October 26th, 1889.

There were thirty-nine members present, many of whom travelled long distances to attend the meeting, which is a proof of the growing interest manifested in the operations of the Branch. Present: S. Wormald (Stockport). J. Renshaw (Rochdale). T. E. King (York). E. H. Williams, W. Kelly, E. Houghton (Manchester). T. Murphy (Bolton). J. Lee Pike (Sheffield). T. Dilcock, F. Gaskell, D. Dopson, R. Edwards, W. H. Waite, H. C. Quinby (Liverpool). C. Rippon, J. W. Senior (Huddersfield). M. Johnson (Chester). George Brunton, J. C. Birch, W. Armin, W. H. Nicol, J. M. Nicol, T. S. Carter, J. H. Carter (Leeds). E. J. Ladmore, T. B. Barnby, A. Howarth (Bradford). Alfred Cocker (Sowerby Bridge). J. H. Jones (Ashton-on-Mersey). W. Broughton (Eccles). T. Wormald (Oldham). D. A. Wormald (Bury). J. C. Storey (Hull). Arthur Cocker, A. B. Wolfenden (Halifax). G. H. Lodge (Rotherham).

The Chair was occupied by H. C. QUINBY, Esq., President.

The PRESIDENT showed a specimen of paper for drying pulp canals, and also his method of introducing it. He also handed round a piece of narrow common tape, and advocated its use for holding polishing materials for finishing fillings on approximal surfaces of front teeth. He also described a method of applying caustic by means of small pieces of amadou, and further stated that amadou may be made more absorbent by immersing in salt and water and drying.

Mr. J. RENSHAW showed a lathe chuck for drills or engine bits, which will hold the finest broach or a half-inch drill. It will fit the spindle of the Dental Manufacturing Company' lathe. It can be obtained at Gleave's, Oldham Street, Manchester, price seventeen shillings.

Mr. COCKER (Sowerby Bridge) showed an improved mouth gag.

Mr. STOREY showed a number of teeth prepared for porcelain inlays, and described his method of manipulation.

Mr. E. J. LADMORE (Bradford) described his method of treating pulpless teeth. An interesting discussion followed, in which the President, Messrs. G. Brunton, R. Edwards, J. C. Storey and J. Charters Birch took part.

Mr. A. B. WOLFENDEN (Halifax), exhibited Dr. Hewitt's apparatus for nitrous oxide and oxygen. He read Dr. Hewitt's remarks on the combination, which appeared in the September number of the Association Journal. He administered gas and oxygen to Mr. Rippon, of Huddersfield, who proved so very excitable whilst under its influence that it was impossible to restrain him sufficiently to obtain anæsthesia. This was partly due to a badly fitting face-piece being used, but it was stated that Mr. Rippon is always excitable and uncontrollable when under the influence of nitrous oxide, and that the excitability manifested in the present exhibition was much less than when he has inhaled nitrous oxide alone.

Mr. R. EDWARDS (Liverpool) afterwards inhaled the combination. Anæsthesia in his case was not perfect, as there was not sufficient nitrous oxide to complete the administration, a great waste occurring through a leakage in the gasometer. He thinks, however, that it is a grand success and a big step forward.

Messrs. Alfred Cocker, Arthur Cocker, G. Brunton, E. J. Ladmore, J. C. Storey, T. Murphy and J. Charters Birch joined in the discussion which followed.

Mr. ARTHUR COCKER (Halifax) showed a chloroform naso-

pharyngeal apparatus, which was commented upon by Messrs. A. Howarth and R. Edwards.

Mr. J. CHARTERS BIRCH, L.D.S., Leeds, exhibited an Oxy-hydrogen Lime-light Apparatus, made for him by Messrs. Reynolds and Branson, Leeds, and used by him for illuminating the mouth during operations at night, or on dark or foggy days. A disc of light being thrown upon the lower part of Mr. Ladmore's face illuminated the mouth brilliantly as though by a ray of sunshine.

Mr. H. NICOL, L.D.S.E., stated he had used a similar apparatus for some considerable time with the most satisfactory results, and by its means he was practically independent of daylight; for by its aid he could work nearly as well by night as day.

In reply to inquiries Mr. BIRCH stated the light is so pure he had no difficulty in matching teeth with it at night; the consumption of oxygen was about two cubic feet per hour, costing about fivepence, and the whole apparatus comparatively inexpensive. He also showed the latest pattern improved Cuttriss electric motor and stand (fitted with instantaneous stopping and starting clutch). Attached to motor for working same through a foot resistance was portable accumulator, weighing twelve pounds, and containing sufficient stored electricity for fourteen hours' work. Attached to cable was a slip joint connection of his own design and construction. With it he was enabled at will to use either straight or right angle attachments, or any other similar tool without structural alteration of same. At the close of the meeting he demonstrated with the motor, attaching and detaching instantly a Power's plugger, and showing how much the blow resembled that of the electric mallet when used as he had it arranged, and how completely every movement was under control. He also exhibited at the same time a varied assortment of the most recently invented dental tools and appliances, including a variety of crown and bridge work requisites; among other things shown being a shoemaker's eyelet punch, used by him for years for punching amadou cylinders, for use as suggested by Mr. Coffin in Ash's quarterly circular for September last, on page 199.

Mr. ALFRED COCKER (Sowerby Bridge) read a paper on "Un-registered Practitioners," as follows:—

I am one of the latest arrivals into the folds of this Association, and, in coming forward so early to read a paper on such an im-

portant subject as that of "Unregistered Practitioners," I not only feel a sense of incapacity to deal with such a question, but I feel I may be thought somewhat presumptuous. Notwithstanding, my humble desire is nothing more or less than to open the question for discussion, for the purpose of arriving at the opinion of this meeting.

In almost all parts of Great Britain unregistered practitioners are to be found, assuming, either in one way or another, to be specially qualified to practise dentistry. Many of them dignify their establishments by some such name as "Dental Company," which further serves to disguise their identity; others are satisfied to exhibit nothing more than a show-case, with their scale of charges; while others, again, venture to add—nitrous oxide gas administered daily, advice gratis, &c. These persons are allowed to practise with all but impunity, when, at the same time, a measure is in our hands whereby we can protect the public from such unscrupulous persons.

I fail to know how we can reasonably congratulate ourselves upon this misfortune of our calling. In the December number of our Journal for 1887, we are informed in the editorial article "that illegitimate practitioners are diminishing in number and power." If this statement were true, it would be highly gratifying to provincial practitioners. It only serves to illustrate how very metropolitan at times are the views of our editorial staff. To me it is a problem, and I should very much like to know how our editor arrives at such a conclusion. In my opinion they are rapidly increasing, and, if steps are not quickly taken to arrest that increase, a state of things will soon be upon us with which it will be impossible to deal, excepting through further litigation.

The incentive to the framing of the Dentists Act for legislation was to ensure to the public that those who practised dentistry were properly trained and fitted for their calling. Almost every respectable practitioner was in sympathy with this movement, which (after great concessions had been made) resulted in Parliament sanctioning a measure of jurisdiction, which has so far proved more effectual even than the Medical Act. This we accept only as a large instalment, and at some future time we hope to see the Act so amended that it will become penal to practise dentistry without first undergoing a recognised course of training. We shall ever be grateful to those who accomplished so much for the public good, and the maintenance and elevation of our profes-

sion. Although some of their designs were defeated, yet such as passed the ordeal and received legislative sanction have as yet proved unassailable. Every prosecution under the Act has resulted in a conviction, even on points identical with those for like prosecutions under the Medical Act, and which have been defeated. This is a great cause for thankfulness, yet we ought never to rest satisfied until the height of our ambition has been attained, so far as legislation can support us in that direction.

I fear we cannot honestly claim to be acting consistently in relation to the enactments granted to us. In the first place, I think we are agreed empiricism ought to be suppressed. This was the *raison d'être* of our measure of reform, by which a trust and power were placed in our hands, and if we have failed to carry out that trust and exercise that power, we have not extended to the public that good we have had reposed in us, and which was so persistently sought after.

One of the main functions of our Association is the maintenance of the honour and interests of the dental profession by furthering the efforts of executive bodies in rendering effective the administration of the Dentists Act, and by such lawful means as may be necessary. Apart from individual status and professional demeanour, this can only be accomplished in two ways; first, prosecutions must be instituted immediately satisfactory evidence can be obtained; and, second, the public must as far as possible be educated to seek only the services of competent registered practitioners, and who do not attract business in an unbecoming manner. The day is far distant when the too credulous public will be so far initiated as to discriminate between the skilled and unskilled practitioner, so that our skill, however meritorious it may be, is not yet likely to be appreciated as fully as it deserves. The first step in that direction, viz., "the compulsory attention to the teeth of school-children, the army and navy," has not yet been attained, nor is it likely to for some time to come. The enlightenment of our profession leads us to recognise the desirability of such compulsion, and our efforts ought to be directed in every possible manner to the furtherance of that object.

In almost every large town teachers hold guilds for the purpose of discussing any question having relation to school children, and they are always grateful to any one who will introduce a subject worthy of their consideration. Wherever such associations exist,

our members should not hesitate to avail themselves of such privileges. The motive for such a course would to some at first appear to be a selfish one, and nothing short of a pure conviction and principle, together with a thorough knowledge of the subject, would serve to displace that prejudice, in order to create popular interest. Prejudice sees what it pleases, and cannot see what is plain. It is evident we cannot expect much in the way I have described. For the present, then, the first resource only is open to us as a direct remedy. We must awake to a sense of our trust, and not hesitate to take the necessary steps for carrying out the provisions of the Dentists Act. Sir John Tomes has said: "Persons who, with knowledge, infringe the provisions of the Dentists Act, should undoubtedly be prosecuted, not so much for the protection of those who are protected by the Act, in the superior education it has caused them to acquire, and by registration, but for the protection of the public." I know no reason why this advice should not be acted upon. The Incorporated Law Society and the Pharmaceutical Society never hesitate to avail themselves of the instigatory power granted to them; prosecutions are quickly instituted through a common informer against any person found contravening their Acts.

The principle and motive of our Act wants carrying more into practice.

Students of dentistry are now compelled by virtue of the Dentists Act to undergo a costly course of training and education, which ensure to them an endowment of knowledge and skill fitting them for the capacity of dentist, but if unregistered persons, with their manifold methods of attracting business and with every freedom, are to spring up in competition, their position as respectable practitioners will be anything but an enviable one.

I admire the exercise of caution only so far that it is not overdone, and it is only right where cases of infringement are brought before the notice of our Board, they should proceed on safe lines. We can truly say so far they have not been hazardous in their instigations, and we hope they never will be, for one unsuccessful prosecution where judgment is adverse will prove a great hindrance to conviction in all similar cases. It is therefore necessary every precaution should be taken in order to bring about a successful issue.

Where persons seek to evade the Dentists Act in a manner

identical with cases already dealt with, it is our duty to seize the first opportunity of taking action against them.

If the funds of our Association are inadequate for such a course, then by all means let those practitioners directly concerned subscribe the necessary sum required. If, as I believe, the unregistered are increasing in numbers, our difficulties are increasing in a greater proportion. I would here suggest the desirability of adopting some method whereby the fluctuations of the numbers of such men can be from time to time arrived at. I am thoroughly convinced more thoroughness is required in this matter.

Further, our Association requires to become more representative, in order to increase its power and influence. Its members rightly consider themselves the more intelligent and skilful portion of the dental profession. Every effort on our part ought to be adopted to induce others to join our ranks, and avail themselves of the advantages our Association offers. We should remember increase of knowledge and skill carries with it a corresponding increase in the estimation of one's services. I hold that to become members of such an Association is the only source open to practitioners whereby they can keep apace with the science and art of dentistry. The ignorance of those who are not members has led them to become somewhat superstitious with regard to our privileges. I claim and maintain it is the duty of every dentist to avail himself of every opportunity afforded him to increase his knowledge and skill, not so much for his own good, as for the good of those upon whom his accomplishments are exercised. Dentists want waking to a sense of their duty, especially so in Halifax. It is a disgrace to so flourishing a town that this important duty should be neglected.

In conclusion I do not believe the attitude our Representative Board have adopted from time to time with respect to unregistered practitioners is altogether unassailable. I should be very sorry to be numbered amongst those who are always ready to find fault, or to be cynical, but I cannot refrain from expressing my feelings in this matter ; at the same time I desire to add my testimony in the due appreciation and recognition of the very valuable services every member of that Board has rendered to the profession ; and it is only due that every consideration should be extended towards them. Where the mistake has occurred has been in electing too great a proportion of the members of the Board from London—practitioners who are not cognisant of what is

going on in the provinces, and who have not felt the pinch of injustice. A number of dentists in a given place, say London, W., all stereotyped in their views, and always preaching up dentistry according to rule, stand a fair chance of defeating invasions by quacks, but where the accord rests in one's self, then the odds are too great, and it is only reasonable our Board should be appealed to for support when it is required. I need scarcely say such appeals are all but futile, even where a conviction is a moral certainty. Here is a case in point : At a meeting of this branch held in Leeds, on February 15th, 1888, a resolution was proposed, seconded, and carried, requesting the Representative Board to take action against an unregistered practitioner in Halifax. Notwithstanding that satisfactory evidence was forthcoming, and which could be substantiated upon oath, that request was vetoed, and nothing whatever was done. Since that time several others have taken the initiative, and are practising on their own account, whereas, if the case had been taken up, such a state of things might possibly have been prevented.

The case against Jackson was by far a greater venture than the one above would have been ; and although not one of the parties to it had had any previous experience of the kind, yet we succeeded in bringing about a conviction. Our Representative Board would have carried this case through with less than one-half the cost.

The Dentists Act was passed over ten years ago, and so far practically nothing has been done to turn its enactments relating to infringements to the best account. During that time only seventeen persons have been proceeded against. The Board have had every opportunity of dealing with a far larger number of cases than that, and why they have not done so I am at a loss to know. A radical change is demanded, for default cannot long be tolerated.

Our remedies oft in ourselves do lie,
Which we ascribe to heaven ; the fatal sky
Gives us free scope ; only, doth backward pull
Our slow designs, when we ourselves are dull.

After all is said and done, we must not expect too much. Rome was not built in a day. It will take years to change the uncultured masses to the standard of our ideas, and generations must pass away before that complete fruition is borne which the advocates of dental reform hope for.

The President complimented Mr. Cocker on the excellence of his paper.

Mr. T. T. CARTER (Leeds) referred to an application which had been made to a young medical man at Leeds, for the use of his name for advertising purposes by a quack dentist, the said quack offering to pay the medical man a handsome sum of money in consideration thereof. The offer was refused.

Mr. BRUNTON read a paper by Mr. W. Booth Pearsall (Dublin), on "Sand Moulding," illustrated by diagrams, casts and moulding boxes.

Mr. Brunton also showed a new thermo-electric lamp, dry corundum wheels and points made by the Waltham Corundum Wheel Company; S. S. White's blowpipe pad, and Mr. Geo. Campion's device for hinging regulation models together.

Mr. STOREY moved, Mr. NICHOL seconded, a vote of thanks to all who had helped by reading papers or showing apparatus and appliances, and thus contributing to what had proved a very successful and interesting gathering.

A vote of thanks brought the meeting to a close. The members took tea together at the "White Swan."

ORIGINAL COMMUNICATIONS.

Implantation of Teeth.*

By G. CUNNINGHAM, M.A.Cantab., L.D.S.Eng., D.M.D.Harv.

FROM the interest displayed at the last meeting of this Association in this subject of the implantation of teeth, I have little hesitation in bringing before you a further report thereon, even although it can only be of an interim nature, since an interval of some years is essential to the estimation of the practical value of these experimental observations on the human subject, and since the period of nine months, which has been at my disposal, has proved altogether too short for the completion of the experiments on dogs.

An increasing number of operators in America seem to have

* It may be of advantage to remind our readers that a preliminary paper on this subject was read by Mr. Cunningham before the Annual Meeting of the Association in 1888, and was subsequently published in the Journal and Volume of Transactions. The present paper was read at the Annual Meeting held at Brighton, August, 1889.

adopted the operation, while those whose names are associated with the earlier introduction of the operation continue to practise it with apparent success.

No specially new methods or important alterations in the operation seem to have been adopted, except further improvements in the instruments employed, the most notable of which are the reamers of Dr. Ottolengui, who has also contributed a very useful and complete study of the anatomical relations of the alveolar sockets especially with a view to this operation.

In my former paper I laid great stress upon the value of statistics, and it is certain that from the absence of such information, most of the literature on this subject, however interesting it may be, lacks the scientific value it might have had.

So far, I of course regard all such operations in the light of scientific experiments rather than operations of ascertained practical value, hence the absolute necessity of our endeavouring to ascertain something really definite with regard to the results of the operation.

I feel it, however, necessary to utter a protest against the wretched and misleading statistical table published by the Chairman of the Section of Operative Dentistry, at the American Dental Association of last year. The absurdity of it is surely apparent from the use made of information I myself supplied, viz., seven cases of implanted teeth which had been in the mouth from a few days to seven months without a loss are tabulated as 100 per cent. of successes and 0 per cent. of failures, without any allusion whatever to the time the teeth had been *in situ*. Three other operators appear in this list with a similar per centage, without a clue being given as to the number, or the duration, of their individual cases. Some of the other entries seem equally misleading, and, therefore, nothing could be more erroneous than the conclusion of the report that the average success of the seventeen operators is correctly represented by 85 per cent. of successes to 15 per cent. of failures.

Similar returns being made this year, however, have been much more intelligibly framed, and should result in information of some scientific value.

NOTES ON MY OWN CASES.

First series.

Before describing my more recent cases it will be better to follow up the subsequent history of the eight cases already presented to this Association.

CASE I.—Enquiries have elicited no response.

CASE II.—On the 25th March, 1889, the scion tooth implanted on the 29th Nov., 1887, that is after an interval of one year and four months, was found to be extremely loose, freely movable in anterior and posterior directions, but strongly resistant to downward traction. The patient reported that the tooth gave way with slight crepitation, and was pushed outwards by biting a "hard bread crust." This accident can only have hastened matters somewhat, as a fortnight previously he had noticed a fistulous opening on the gum, which, as he rightly remarked, was a sign that all was not going on quite right. On extraction the root was found to be considerably absorbed, while it seemed evident that for some time at least it had only been retained by the growth of the granulation tissue into the cavity of absorption. The former socket seemed to be filled up with a formation of new bone above the absorbed root; the lower border of the gum was red and somewhat inflamed. A dressing of cotton wool saturated with carbolized resin was inserted into the wound, as it was determined to try a second implantation. It was extremely difficult to find a suitable scion tooth for this case, so much so, that the first attempt was made with a rather badly decayed right lower canine, which, after pulp treatment and filling the crown with a porcelain inlay, was ground down to represent the shape of a lateral. After being placed in position it was so unsatisfactory that a honeycombed or pitted, but otherwise healthy lateral was substituted for it. The preparation of the second socket proved more difficult and tedious than the first. A 50 per cent. solution of cocaine hydrochlorate failed to diminish the pain of the operation to any appreciable extent. The tooth was fixed with a gold splint, only covering the tips of the teeth anteriorly, by means of a phosphate cement. During the night the splint came off, and when the patient presented himself next day the tooth was found to be quite loose. Having overcome the patient's objection to a splint which would show from the front, I proceeded to arrange a metal ribbon splint; while doing so the patient flinched and the tooth was left in my hands. I did not regret this so much, as even this second tooth was not satisfactory from the point of view of appearance, and I was obliged to resort to another which I noted at the time as "an emergency case." It was the left upper lateral incisor of a little boy of thirteen years of age, extracted nearly six months previously, and had been kept for 171 days in a one in two thousand solution of mercuric chloride. The pericementum was shreddy and detached, and on the distal surface presented a curious metallic-looking stain. The crown was largely disked in order to adapt it to its position on the right

side. The socket was syringed with one in a thousand solution of mercuric chloride. The tooth fitted fairly tightly and was fixed by a German silver ribbon splint extending round the neighbouring adjoining teeth. The pulp, which was non-putrid, was removed when the tooth was *in situ*, the root canal and cavity on the palatal surface being filled in the usual way.

On the 12th August, 1889, this second implantation was found to be not as rigid as the first, but still fairly firm and perfectly comfortable.

CASE III.—This case will be familiar as the one which was presented at Dublin last year. Soon after the meeting he had a severe attack of what was described as rheumatic fever, without rheumatic pains. He was delirious for three weeks, and had other complications, which laid him up for a very considerable time; in fact, it was quite six months before he could be called fairly convalescent. The patient again kindly presents himself for examination. You will have no hesitation in endorsing the patient's statement, that the scion tooth is "perfectly firm and unshaken, and the gum quite healthy."

CASE IV.—On August 9th, 1889, the patient writes to say that the tooth implanted on the 4th February, 1888, is going on very satisfactorily.

CASE V. will be remembered as that of J. H. G., a barrister, in whose case the antrum was perforated in the preparation of the artificial socket. The scion tooth, after becoming absolutely firm and rigid, somewhat suddenly became loose, and was lost just about a year subsequent to the implantation, which more than justified Mr. Baldwin's pessimistic view of the situation.

With regard to the fistulous tract in the molar region, which Mr. Baldwin considered led from the antrum, and which I thought was rather ascribable to the death of the pulp in one of the molars, although no sufficiently carious cavity was apparent, it seems rather to have been caused by the latter condition, since he has been compelled to drill into the molar and remove the dead pulp.

CASE VI.—T. S. G. Enquiries have elicited no response.

CASE VII.—The patient writes, August 15th, 1887: "Tooth very firm."

CASE VIII. was remarkable in my report of last year from my having noted it as being probably a failure. The patient, from the urgency of his duties in a large and important public school, was unable to present himself for examination until the Christmas vacation. On January 2nd, 1889, the patient reported that he had worn the splint for about six

weeks, or possibly longer, after the operation, but on removal he found that the tooth was quite loose. He had had, however, absolutely no pain or trouble with it. The tooth was found to be extremely loose; the labial surface of the gum over it and the adjoining teeth were in a chronic state of inflammation; on the palatal surface the tissues were so absorbed as to expose a portion of the root of the scion tooth, but the gum seemed quite healthy in appearance. This surface was quite clean, while the labial surface was covered with food débris, the patient being afraid to brush it in consequence of its looseness. The tooth could be moved up and down in the socket, but was so retained that it could not be pulled out with the fingers, showing that there was a distinct attachment of some sort. The lateral movement was very considerable, and by holding the crown one seemed to be able to move the apex of the tooth very slightly. The gum was detached for some way all round the root, but no signs of pus formation were observable. The articulation was such that on each closure of the mouth the tooth made a considerable excursion upwards and forwards. My own inclination was to remove the tooth at once, but the patient preferred giving it a longer trial; the articulation was therefore eased, and a new gold wire splint applied. The inflamed gum was treated with resorcin and tincture of iodine. In the course of the third week the splint, from the thinness of the rings, broke, and on his presenting himself in the Easter vacation the patient accepted my decision as final, and the tooth was removed.

The patient was quite willing to try the operation once more, but since I ascribe the failure in this instance as partly due to the already greatly absorbed condition of the alveolus I deemed it futile to make any further attempt in that direction, and succeeded in remedying the defect by the application of a porcelain crown attached to the second bicuspid.

It will be remembered in this case also that there was a perforation of the antrum. Examination after the removal of the implanted tooth showed a complete closure of the perforation by the formation of new bone. The accident therefore gave rise to no trouble beyond that mentioned in my previous report.

Summary of Cases (First Series).

In all eight cases, with eight implantations; four of these are reported as doing well (August 1889), two have not replied to enquiries made, while two are failures. Of these two failures one was never promising and never got firm, while the other was exceedingly firm for nearly one year.

Second Series.

I shall now ask you to consider the cases which have been operated during the present year, some of which, even when extremely unsatisfactory from the patient's point of view, I think do something, if only in a negative way, to establish a knowledge of some of the details essential to success.

A careful consideration of the literature on replantation and transplantation of teeth seems to prove that there is a possibility of a re-establishment of the vitality of the pulp in both replanted and transplanted teeth. As some practitioners are, not unnaturally, sceptical as to this possibility, I shall present for your consideration short quotations from two authors, both eminent scientific men belonging to our Association, and in the accuracy of whose observations I am sure you may place implicit trust. The able editor of our Journal, in his interesting little book "Aids to Dental Surgery," says:—

"All analogy would seem to be in favour of the probability of re-union and re-establishment of vitality in the pulp, and only an unaccountable prejudice seems to range itself on the other side. In addition to these theoretical grounds I have practical reasons for believing in the phenomenon. On two occasions recently I have extracted incisor teeth, and replaced them immediately in an altered position. The teeth became rapidly firm and comfortable, and in a day or so were free from tenderness. After three years they retain their natural colour, though, the patients being children and the injury sudden, death of the pulp might fairly be supposed to have entailed discolouration. Their sensibility to warm instruments was as great as that of their neighbours. A powerful lamp, which rendered the teeth transparent, and readily showed a dark pulp chamber in other dead teeth, showed the usual pink appearance in the teeth in question. Every experiment we could devise pointed to the fact that the teeth were alive, and I firmly believe they were so."

Professor Stack, in his masterly paper on "Replantation and Transplantation of Teeth" claims for Mr. Arthur Baker, Mr. Abraham and himself, the honour of actually demonstrating that the union of the pulp vessels and nerves with their trunks can take place in such teeth after removal.

"In a case of great irregularity where two bicuspid had to be removed. . . . I was permitted to transpose the teeth under nitrous oxide. The teeth fitted into the new sockets nicely, but after a fortnight the tooth which had been transplanted into the right socket was attacked with alveolar abscess. It had apparently got all right after the operation, but I suppose putrefaction of the pulp had then set in, resulting in the necessity of removing the tooth. The other tooth

united firmly, however, and kept a good colour. After two months I determined to remove it, but before I did so I drilled in cautiously through the crown; after each few revolutions I asked if I gave any pain, but I found I gave none, nor did I give any when the drill entered the surface of the pulp, but there was bleeding from the wounded organ. The tooth was then removed and handed to Mr. Abraham for microscopic examination (*vide* Figures 1 and 2). In other cases that have come under Mr. Baker's and my notice, where the tooth had ultimately to be removed for irregularity, was replanted for a short period, and microscopic examination has shown evidence of vitality in the pulp. In all six teeth have been examined in this way, in four of which we found signs of life, while in two, namely, one that has been already mentioned and another, we found bacteria and other evidence of putrefaction."

Although it is not certain that direct reunion of the pulp has occurred in these cases, but only an ingrowth of new granulation tissue, such evidence alone seems to justify my endeavour to ascertain whether it was absolutely essential to eradicate the pulp of the scion tooth in the analogous case of implanted teeth. Although in such cases my fear was that it would be futile, I deemed it better to establish the fact by actual experiment. I, therefore, determined to adopt it should a favourable opportunity occur, always recognising that the shorter the interval between extraction and implantation the better would be the prospect of union. Another motive which impelled me to attempt what some may deem an utterly hopeless experiment was the fact that thereby one would remove what is an undoubted disadvantage, viz., the injury more or less great which must ensue to the periosteum when the tooth is prepared and filled out of the mouth, while, moreover, I thought that by carefully watching such teeth one might be able to mark the degeneration of the pulp from external experiences, and, by its then removal, prevent the deleterious consequences that might be anticipated therefrom extending to the area beyond the apex.

With these views, and under the stress of exceptional circumstances, I endeavoured to determine this point in the following case.

CASE IX. will be familiar to some of you, since it formed the subject of my clinic on this operation at the Dublin meeting. The patient, R. E. T., was a healthy young dentist, aged twenty-four, who had lost the right upper first bicuspid some years previously. The gum was healthy, absorption of the alveolus complete, and the condition of the operating field seemed entirely favourable. The scion tooth (a left

upper first bicuspid) was extracted from the mouth of a healthy young girl aged sixteen, and was out of the mouth only about three-quarters of an hour, during which time it was kept in a one in one-thousand solution of mercuric chloride. Owing to the circumstances, I neglected to make my usual notes on the condition of the periosteum, but my impression is that while the root seemed only partially covered with periosteum it was not, as far as my experience went, at all an unfavourable case for implantation. In adjusting a metal ribbon splint of the usual kind with phosphate cement, I found to my dismay that the latter did not seem to set properly. It was a fresh packet of Weston's cement furnished direct from one of the exhibitors, and I therefore thought it might only be extremely slow setting and that it was better to let the partially set mass remain, thinking that all it wanted was time to complete the process. The cement, however, never thoroughly set, and within two days the splint came away.

I have been unable to get the exact details of the subsequent history of this case, but the gist of it is as follows :— The case was more or less troublesome from the first. The tooth was never firm. In October my brother removed the pulp, and filled the root canal. In December the patient removed the tooth himself. The roots were much absorbed.

CASE X. was that of a young Cambridge graduate, A. T., aged twenty-three, of excellent physique and extraordinarily good health, despite the fact that his teeth and gums were in a simply deplorable condition, but after an extensive series of conservative operations upon other teeth it was found that four of those in the upper jaw were so bad as to necessitate radical treatment in the shape of extraction. There were two fistulous openings, one over the right upper lateral incisor and the other over the left upper bicuspid, while of both the first molars only the remnants of the three separate roots remained. The aspect of the gums was of dull purple colour, with swollen inter-dental papillæ, in fact, that chronic gingivitis which is so characteristic of a long-neglected mouth. The case was certainly not a favourable one, but it was determined to make the experiment of implantation there and then, because the operations would be less severe if performed at that time than if they were postponed until the parts had completely healed. On August 30th the remains of these four teeth were removed. On September 1st the sockets of the right upper lateral and the left upper bicuspid were enlarged and widened in their whole extent. The scion tooth for the incisor space was the right upper lateral incisor of a healthy young woman, aged nineteen. The pulp was removed

and the root canal filled with zinc oxychloride, and the two carious cavities in the crown filled with gold. With regard to the condition of the periosteum the upper part was very bare and the entire root very much stripped. Every care, however, was taken with these remnants of the periosteum by retaining the scion tooth during the treatment in the holder which I described last year. The interval of time which elapsed between its being extracted and implanted was exactly twenty-five hours, during which time it was retained in the usual solution of mercuric chloride, 1 in 2000. It was secured in position by means of a metal ribbon splint and phosphate cement.

The scion tooth for the bicuspid space was taken from a healthy young patient, aged thirteen, and was prepared in the same way and with the same care as the other tooth, but owing to the apices of the root being still patent the instrument and the filling material passed through the foramina. There was much more periosteum on this tooth than the other, but only in patches, while the greater part of both the labial and distal surfaces were completely stripped. In this case four days elapsed between extraction and implantation of the scion tooth, during which time it was kept in the usual solution. On completion of the operation it fitted so firmly between its two neighbours that no splint or ligature was deemed necessary. An idea of the unsatisfactory condition of the operating field in this case may be gathered from the fact that on the same day I was obliged to make a series of small scissor incisions in flaps of the gum with a view of inducing it to grow over the alveolar border which was completely exposed in several instances in the inter-dental spaces. On September 3rd the sockets of the molars were prepared for the scion teeth. These both came from a healthy young girl, aged fifteen, and as the time between extraction and implantation was of the very briefest and the teeth for all practical purposes sound and perfect, the pulps were not removed. The periosteum, however, seemed to have been almost entirely stripped off in the process of extraction, with the exception of a fair investment at the apices of the roots. The interval between extraction and implantation was twelve minutes in the case of the left molar and twenty minutes in the case of the right. Both teeth fitted so tightly that no splints were applied. The patient left Cambridge two days afterwards, and reported that the case seemed to be going on fairly well. About September 13th the teeth became somewhat displaced and the patient wrote asking for a splint to be sent. I was then away on my holiday and the assistant sent him a splint with instructions for its application. On September 15th the

patient wrote:—"I tried to follow your instructions but only succeeded in making the teeth much looser, therefore went to a Bradford dentist and let him try—same result, that is, teeth much looser still, in fact, I thought myself more successful than he. . . . That they stood all this pulling about makes me believe they would have held if I had left them alone, but now they are so very loose that it hardly seems safe to leave them unfastened."

On his return to Cambridge on the 16th the teeth were found to be loose, those on the left side particularly so; and pressure of the gum on the labial surface caused a considerable amount of pus to flow from both molars; similar pressure on the palatal surface betrayed no existence of pus formation. The wire splints having been re-shaped they were applied, and the teeth fastened with thin wire. The mouth had not been kept so clean as it might have been, and extra urgent advice was given him on that point. Towards the beginning of November the thin binding wire seems to have led to considerable swelling of the gums, which promptly yielded to an arnica and chlorate of potash wash.

On November 18th the patient writes that "Either the bone or the root of the molar on the left side appears through a small hole in the gum so that I can touch it." It was not, however, until January 11th that he was able to return to Cambridge, the dental alloy splint being still in position. I noted the condition of the parts four months after the operation as follows: the right upper lateral incisor and first molar fairly firm in splint, left upper bicuspid and molar loose and evidently doomed; much food debris and other deposits on the left side, the right side in better condition. On removal of the splint the lateral seemed fairly firm, the right molar less so. The gum was noted as being in fairly healthy condition for a normally purple gum; the left upper bicuspid was quite loose and the gum deeply congested. The tooth could be made to make a considerable excursion both in labial and palatal directions, but on traction with the fingers would not come out. It rose and descended in the socket as the patient opened and closed his jaw. The molar was even in a worse condition, the buccal roots were quite exposed and the gum and the alveolar plate seemed quite gone, the surface being thick with putrefactive debris. The excursion of the tooth laterally seemed quite unlimited; there was, however, resistance to downward traction. This, however, seemed entirely due to attachment on the palatal root which however was only apical. The molar was then removed with the fingers; it looked and smelt like what it was—viz., a badly necrosed tooth, with a merest attachment at the end of the

palatal root. It was decided to give the right molar every chance, and although not very promising the crown was drilled into, the pulp removed, the root and crown being treated in the usual way. From the pus, however, which exuded from the border of the gum it was evident that it was following very much the same course as its fellow on the other side.

On April 29th, about seven months after the operation, I had another opportunity of examining the case, when the general condition of the mouth was noted as badly inflamed, but bright raw patches on the labial surface of the gum. The right upper lateral incisor was loose and could be made to make a considerable excursion forward, when it was evident that there was no attachment of the gum on the palatal surface, though the gum there was pink and healthy. There was no dropping of the tooth, nor could it be forced upwards, indicating considerable apical attachment; labially there was a fistulous opening with a discharge of pus. On examination I could find no signs of bone on the labial surface of the root, only a thin covering of the gum with considerable absorption in the neighbourhood of the fistula. Both the central incisors, which were pulpless, had also been treated in August, 1888, were also rather loose, and on enquiry I found there was a history of rather a severe blow at football which occurred in February, 1889. The left upper molar showed considerable freedom of movement in labial and palatal direction on pressure, while pus was escaping from the labial margin of the gum. I noted at the time that it seemed as though the absorption of the alveolar border which usually occurs after extraction had gone on in spite of the implantation. The gums had receded and were for him of a fairly healthy colour; the roots of the implanted teeth were largely exposed and looked as if necrosed. The left upper bicuspid was in a hopeless condition, moving freely in all directions; it was therefore removed. An effort was made to improve the conditions of the two teeth on the right side, but unsuccessfully, for on the patient again presenting himself on August 7th, 1889, the molar was found to be in a hopeless condition with pus exuding from the margin of the gum, it was therefore extracted and found to be quite necrosed. The lateral incisor was loose, but without the slightest sign of any pus formation; there was great absorption on the labial and lingual aspects, the gum even to the very edge seemed what we would call normal for this mouth. It was quite resistant to downward traction, and required some considerable force to extract it. The parts rapidly healed and two partial bridges, one of them removable, have been adjusted to fill up the space.

In this case failure has been complete and absolute, and the question may be well asked: Was it worth trying? I thought the patient would be a better judge of that, for I must candidly admit that had my sole desire been to achieve a high per centage of successes I should never have attempted this case. The following is a spontaneous and untouched record of the patient's impressions after failure:—

“Having had four teeth implanted I have often been asked what my impressions of the operation were. Though in my case it was a failure, I do not regret the experiment, although I cannot help being disappointed at its want of success. I have already written some notes on the pain of the operation, and whilst it was still fresh in my mind, and so these are of a more general nature.

“I had the case put before me honestly from the start by Dr. Cunningham; it was an ‘experiment’ which had succeeded for others—might succeed for me—and quite possibly might fail, more especially as the conditions were less favourable than usual. I was also given a very good idea of the nature of the operation. If it were a success the advantages were so obvious that I was quite willing to undergo the experiment. After the first two implantations I could not help remarking: ‘Well, it is not so bad after all’—and when all four were finished, I considered that as far as pain was concerned it was worth undergoing, if the teeth would stop in for six months. One was in for five months, one for eight, and the other two for a year, and though they were never very firm these last two certainly did a very fair share of useful work.

“After the operation I never had the least trouble with the teeth—no pain and no inconvenience in talking or in any other way, and so little extra precaution did I take for them that I played football, with all its risks, and with perhaps as much recklessness and as many little mishaps as seem usual to me.

“So after a good experience I cannot see anything to be afraid of in this new process. It does not strike me as worse than some other more ordinary dental operations. I am sure I suffered more pain in the drilling and stopping of one particularly decayed tooth than in any of the implantations; and I have a much stronger objection to the two or three hours’ pain caused by copper sulphate treatment of the gums than to the much shorter, if severer, pain of implantation. A day’s severe toothache is a thing to be dreaded in comparison to the operation.

“Finally, I cannot but think the chances of success in my case were seriously diminished because I could only see Dr.

Cunningham at intervals of four months, and in the meantime had no opportunities of getting other expert advice.

"August 17th, 1889.

A. T."

CASE XI. was that of A. E. M., a medical student, aged nineteen, whose teeth were in an excellent condition but for the remains of two small roots of the left lower first molar. On November 13th, 1888, these were extracted, the two cavities furnishing a guide for the direction of the new sockets, which were enlarged there and then. The gum was healthy, and the condition of the operating field thoroughly satisfactory. The scion tooth was one which had been extracted on the previous day by Mr. Baldwin for the relief of an irregularity. It was sound and healthy, and had been kept in the usual solution (Hg Cl₂ 1 in 2000), although the greater part of the roots were covered with periosteum, one or two places were stripped quite bare, notably the entire lingual surface of both roots. The operation proved fairly simple, and was so well adjusted to the shape of the scion tooth that the support of neither splint nor ligature was deemed necessary. No further treatment was necessary, the parts quickly healed, and on examination of the case, on May 22nd, 1889, I found the gum healthy and well attached, but the roots exposed as far as the bifurcation on the lingual side. The tooth was then quite firm, and had given rise to no trouble.

CASE XII. was interesting, if only from the fact that the past history of the tooth replaced proved that there are other dental operations which sometimes result in as rapid failure and in as serious results as that of implantation. This patient, B. B. H., a healthy undergraduate, then aged twenty and a-half years, had had the carious crown of the left upper lateral incisor excised and a pivot tooth adjusted on the root in February, 1887, by a London practitioner. In November, 1889, I found that the tooth was loose and carious, and had given rise to a chronic abscess, with considerable swelling on the palate.

After extraction of the root, probing demonstrated the existence of a very considerable cavity in the bone, at the apex of the root, and arching towards the palate. The socket was dressed with styptic colloid until the following day (Nov. 17th, 1889), when it was enlarged and burred in its fullest extent. The scion tooth was that of a healthy undergraduate, aged seventeen, but from a twist in the root it was considerably stripped of its periosteum in extraction. The mesial surface was almost bare, while only patches were visible on two-thirds of the labial and on one-third of the distal surfaces. No special preparation was made, nor were any special antiseptic precautions taken, beyond those of scru-

pulous cleanliness. Half an hour elapsed between extraction and implantation. It was fixed with a ribbon metal splint and phosphate cement. In about a fortnight (sixteen days) the splint was removed and the tooth disked to a more suitable shape. It was then fairly firm and all signs of the abscess had disappeared. I have not seen the case since, but on August 8th, 1889, the patient writes that it is as firm as any of his other teeth.

CASE XIII. was that of P. W., aged nineteen, a healthy young dental assistant. Some five or six years previously he had his upper central severely fractured, and after some ineffectual pulp treatment, the roots finally removed. Evidently the small partial denture he was then wearing had not been inserted for some time subsequent to these extractions, since the space between the laterals was considerably contracted. The gum was quite healthy and the condition of the operating field thoroughly satisfactory, except for the fact that the alveolar process was extremely thin, principally from absorption anteriorly. Notwithstanding the fact that he had assisted at most of these implantations, he was extremely desirous of undergoing the operation in his turn. We had long been on the look-out for two suitable teeth when one afternoon, just as I was on the eve of leaving for London, my colleague, Mr. Jones, brought in two upper lateral incisors, which very nearly filled up the intervening space between the patient's own lateral incisors. The scion teeth were extracted from the mouth of a healthy boy, aged twelve, on Dec. 8th, 1888, at three o'clock. Within twenty minutes of our decision that these teeth would suit the case, and within one hour of the extraction the two artificial sockets had been made and the two teeth successfully implanted therein. The teeth were ligated with silk, and the wound healed fairly firm and rapidly. The pulps of the teeth had not been removed, which did not prevent the teeth in a short time becoming firm without any change of colour. About two months afterwards the teeth began to loosen, and on February 11th, 1889, examination showed that the right upper central was extremely loose, while a fistulous opening had formed on the palatal central ruga. This fistulous opening was evidently caused by this incisor, as the crown could be distinctly moved by pressure with a stiff probe through the fistula. The left upper central incisor was looser than formerly, yet still relatively firm. After adjusting the rubber dam, the pulp cavities in both teeth were opened. The lower parts of the pulp seemed to have undergone a kind of liquid degeneration, while the upper parts, from their bloody condition, afforded evidence of the vascularity of the pulp. There were only slight traces of putridity.

There was absolutely no trace of sensibility in the pulps. After their removal the roots were treated in the usual way, syringed with one per cent. solution of mercuric chloride, filled with zinc oxychloride, and the crowns with phosphate cement. No distinct discolouration of the dentine was visible. During this operation the right upper central suddenly turned with the drill, showing that the attachment had been broken, and on pressure the tooth made a considerable excursion upwards. After removal of the rubber dam, I found I could remove it quite easily with the fingers. The upper half of the root was absorbed to a considerable extent, while the lower half was smooth and seemed devoid of a pericementum. The socket was syringed out with a one per cent. solution of mercuric chloride, also with peroxide of hydrogen (10 vol.). The tooth was then replaced and secured by means of waxed silk ligatures. In a few days the teeth were much firmer, but have never yet become so firm as they formerly were. The patient reported (July 24th, 1889) to my brother that they are still in position.

CASE XIV. is somewhat peculiar. It was that of O. P., a young, healthy Cambridge graduate, aged twenty-two. He had consulted me specially about an extreme and disfiguring irregularity of his front teeth. He objected entirely to any method of regulation which would entail the wearing of plates for any length of time. The deformity in the upper jaw was treated by luxation. We determined to treat the deformity in the lower jaw by the extraction of the left lower canine and the forcible luxation of the left lower central. In consequence of the canine being entirely out of the arch, and the crowded position of the lateral and first bicuspid, it was impossible to apply the forceps in the usual way. After some difficulty it was, however, successfully removed. Then, in endeavouring to luxate the lateral into position, it suddenly "leapt" out under the pressure of the forceps. The tooth was placed nearly at right angles from its normal axis, and on examination it was found that the root was long, tapering and twisted. It was then deemed better to drill out the inter-alveolar septum in order to form a socket for the tooth which seemed best adapted to the situation. This proved to be not the lateral, but the canine. In consequence of the great length of the root the process was extremely tedious, difficult, as well as very painful to an extremely nervous patient. In a part of the operation the patient caused the instrument to swerve, which resulted in a perforation of the alveolus and the gum posteriorly about the level of the freedom of the tongue. The wound was dressed with styptic colloid, and the formation of the socket completed, when the

lower canine was successfully implanted and ligated with silk. On August 12th, 1889, the patient writes to say that though he has worn the splint over six months the tooth is not firm and has "lost its colour."

CASE XV., that of N. A. G., a medical student, aged twenty-nine, and for whom several teeth were implanted. On December 13th, 1888, I extracted a very badly-decayed broken-down molar from the right side, the roots coming away separately, otherwise the condition of the operating field was quite healthy. The scion tooth was then extracted from the mouth of a young girl, aged fifteen, for the relief of an irregular denture. On examination the scion roots proved to be just about twice the length of the extracted roots, while, owing to the great curvature of the roots, they were stripped quite bare of pericementum in large places in the course of extraction. The operation of drilling the socket, especially that for the mesial root, was extremely difficult, principally from the fact that the operation had to be performed with a straight instrument. In consequence of the bulging shape of the scion tooth, it was necessary to disc the crown very considerably before it could enter the space. A small crown cavity and adjoining fissures were filled with amalgam, but the pulp was not removed. In consequence of the curve in the roots the socket had to be made rather unusually large, and, when removing the tooth at one of its final trials, it was seen that the blood mixed with the fresh débris of bone had formed a kind of stiffish paste, which seemed to have taken an exact impression of the roots of the scion tooth, showing a complete septum between the alveoli. It was determined not to syringe the socket out, the idea being that such a matrix must necessarily contain a considerable number of live bone-cells, and therefore be likely to form under favourable conditions new bone around the roots, this suggestion being based upon Dr. McEwen's experimental researches on bone implantation. The tooth had been kept moist in warm water only, and throughout the operation no special antiseptic precautions were taken beyond those of absolute cleanliness, the reason for that course of action being based upon the fact that it is not at all impossible that the drugs, such as mercuric chloride and others, which are employed to prevent the advent or connection of micro-organisms, may be extremely detrimental, if not fatal, to the cellular life of the pericementum of the scion tooth. Since such an admission of wilful neglect of all possible antiseptic precautions may expose me to the adverse criticism of the advocates of strict Listerism, I may be permitted to mention two facts—firstly, that despite the numerous organisms found in the

human mouth, any wound in the same is usually characterised by its healing more rapidly than in other parts of the body; and, secondly, that it is absolutely impossible to maintain strict antiseptic conditions in a case of an implanted tooth subsequent to the operation.

The tooth seemed to fit fairly firmly in position, therefore no splint or ligature was applied, but the edge of the wounded gum was simply dressed with styptic colloid.

About twelve days after the operation the patient remarked an increasing looseness in the tooth for a few days, accompanied also, curiously enough, by a considerable amount of sensitiveness, a condition which he described as becoming chronic for a considerable time.

Eleven days after the operation Dr. Harrison, who kindly took charge of the case for me, reported that the tooth was very firm—in fact, as tight as any of the neighbouring teeth. There was no pain and the parts very healthy. Within two days, however, he noticed a certain looseness, and on the following day found the tooth extremely loose and a little tender.

When I saw the case again, about a month after the operation, the tooth was doing so well that nothing was done, but on his returning at the end of the second month, I found the tooth perfectly loose. I therefore drilled into the tooth and removed the contents of the pulp cavity, which were moist and extremely putrid. The pulp canals were syringed out with 1 per cent. solution (Hg Cl_2) and filled with zinc oxychloride, with copper amalgam filling in the crown.

For this same patient I also undertook the experiment of implanting three contiguous teeth in the upper jaw to replace two broken-down, decayed, bicuspid roots and an absent first molar. On December 17th, 1888, on the extraction of the first bicuspid root, it was found to have a considerable abscessed sac formation contiguous with the thickened periosteum at the apex of the root. The left upper second bicuspid root presented no such formation. On the 19th the patient reported that he noticed yesterday a discharge from the socket or sockets of the extracted roots, and on examination on passing a probe into the second bicuspid socket it was found that it had passed into the antrum. A close examination of the gum over the long-since extracted molar seemed to present indications of the former position of its roots by slight depressions. It seems that about five years previously the crown had been fractured in the process of extraction, and that it was with great difficulty that the roots were separated and extracted. The tooth specially selected for this case proved unsuitable on trial. The operation was then postponed until

the 19th, two days after the extraction, when I was compelled, in default of a better choice, to employ three teeth which I noted at the time as being "not all that could be wished," principally on account of the roots of the bicuspid being too long and the roots of the molar too divergent. The periosteum also only seemed to be perfect in parts here and there. The roots of all of them were prepared, as in the other cases, in the holder, and the crowns filled with amalgam. For the three teeth I am indebted to the courtesy of the house surgeon of the National Dental Hospital, but, unfortunately, without any details as to the age, &c., of the patients. Previous to beginning the operation the antrum was syringed with warm salt water. The molar implantation was begun by making a deep crucial incision (St. Andrew's Cross) over the side of the molar; the flaps then produced were then pulled aside. In making the socket over the palatal root the drill, after but a very few turns, suddenly passed into a cavity, evidently that of the antrum. I thought I might have a better chance with the buccal roots, and therefore proceeded to prepare the distal buccal root, but in this region the bone seemed to be even thinner. It was encountered in drilling the mesial buccal socket. In adapting these to the scion roots it was found necessary to enlarge them into one cavity. A considerable difficulty was experienced in getting the molar into position, as either the buccal roots remained outside the alveolus while the palatal root was in position, or the palatal root of the others were in position. Finally, the intervening bone broke away in course of manipulation. This large cavity was then extended until the molar entered, but just as that was being completed a very sudden increased flow of blood took placé, with marked pulsation, evidently showing that one of the smaller arteries had been severed. Digital compression failed to arrest the flow, so I endeavoured to force the tooth into its place. Happily, it fitted tightly, and in a short time the hemorrhage was successfully arrested. In subsequently removing the tooth, to adjust it to the articulation, it was found that a matrix of blood and bone débris had been formed about the roots; this was allowed to remain, and the tooth finally adjusted after a final bath in 1 in 2000 solution of mercuric chloride. The excess of the flaps was trimmed with scissors, and the edges of the wound dressed with styptic colloid. The antrum was then thoroughly washed out through the bicuspid socket, first with warm water and then with a 1 in 3000 solution of mercuric chloride. After enlarging the sockets very considerably the second, and finally the first, bicuspid were adjusted and fixed without very much trouble, except that of adjusting their position and the articu-

lation of their crowns. The second bicuspid was somewhat loose, but was held fairly tightly in position by the crown of the first bicuspid on the completion of the third implantation. In this case the flaps and edges were carefully washed with an antiseptic and dressed with styptic colloid.

The operation was of course a severe one for the patient, and although he was decidedly extremely nervous he stood it remarkably well, although his preparation for the same was about a dram of the extract of coca leaves and about sixty minims of sal volatile. After the operation, on going home, he took ten grains of antipyrin, and a second and smaller dose on going to bed at night. On leaving he had only a sensation of an uneasiness and fulness in the left cheek, and no absolute pain.

With regard to the operation itself, the patient's own account, quoted from the diary of his case, is as follows:—"I did not think the pain very severe, but the nervous strain and irritation very exhausting, and I was quite prostrated by the time the implantation (the molar implantation) was finished. After a rest the two pre-molars were implanted, pain and discomfort being, of course, a good deal less than in the case of the molar."

The patient passed a fairly good night, in fact much better than the two previous nights, since he felt a considerable pain of a dull kind on the left side of the face for two days after the extraction. Two days after the operation the parts were dressed with styptic colloid, and a disarrangement of the implanted teeth corrected, and a ribbon splint applied which passed round the canine and second molar. The patient reported that he had had no pain, though a slight swelling of the face was noticeable.

On the following day, the 22nd, as the patient was returning to Brighton, I recommended him to place himself in the hands of Dr. Harrison, his former dental attendant, who reports on the case as follows:—"Dec. 24th.—Upper teeth in splint; phosphate cement much cracked and chipped; first bicuspid seems much displaced inwards and upwards. Splint firm, but interferes with bite on lower canine, which was corrected; parts generally healthy. Dec. 26th.—Splint broken yesterday; teeth are very much firmer; first bicuspid greatly displaced but firm; articulation of second bicuspid and first molar fairly good and very firm; fixed new splint with some trouble. Dec. 27th.—Phosphate cement breaking away from splint, therefore removed by patient in consequence thereof; teeth very firm and generally healthy; re-fixed splint with phosphate and gutta-percha base plate."

On Jan. 8th patient returned to Cambridge, when old splint

was removed. A model was then taken of the parts, and a half round gold wire splint, shaped on a metal die and fashioned somewhat after the style of a Hammond's wire splint, was substituted for the ribbon splint, which is certainly much too thin and frail for so extensive a splint as one including five teeth.

A few days after this the patient complained of a recurrence of a discharge from the left nostril, accompanied by a feeling of fulness, and slight pain of a dull kind.

On Jan. 15th, the upper molar slipped in a little further, coming quite clear of the opposing teeth, which caused some pain and inconvenience for the three or four following days. On Jan. 25th he reported that the discharge from the nostril had ceased. In his letter of that date he expressed a desire to have the molar replaced, but did not feel justified in risking it owing to his early departure for New Zealand.

On Feb. 8th I saw him for the last time. He reported that his health had remained sound, but that he had felt since the operation a general lowering of tone and want of energy, and occasionally a sense of irritation. Being a medical student, and therefore well acquainted with the anatomical relations of the parts, he was more apprehensive as to the possible results of the case than would have been an ordinary patient devoid of that knowledge. His trouble therefore during his last few weeks in this country was more mental than physical, and I trusted that by the time his voyage to New Zealand, which he was then undertaking, was complete, his anxiety would be entirely a thing of the past, as I think there can be no doubt that the period of danger had been successfully passed previous to his departure, even although all of the implanted teeth should be lost.

The patient promised to send me a report on his case for this meeting, but it has not come to hand. His mother writes to say that the delightful voyage has restored her son's health. His letters are cheerful, though he has broken his collar bone. His only remark about his teeth was one made in May, that they have been a terrible anxiety.

CASE XVI. was that of G. S., a healthy but rather nervous young man, aged twenty-five. This case was a somewhat peculiar one, since although his teeth generally were largely decayed in the ordinary situation of caries, nearly all the front teeth were largely decayed over the whole palatal surface as a result of wearing a cheap (three teeth 12s. 6d.) vulcanite plate. He had worn the plate constantly for about four and a-half years, and cleaned it when it wanted it—namely, about once a month or so. At first he did not remove it so often as that, since he was directed not to take it out at

all by the—well we cannot call him dentist, let us say manufacturer. All the surfaces touched by the teeth were considerably affected, but more especially the central incisors, right lateral incisor and both the canines. The first indication of treatment was evidently the disuse of the plate, to which the patient readily consented despite the deficiency caused by the absence of the left upper lateral. After the numerous fillings had been completed and a healthy condition of the mouth thoroughly restored it was determined to replace the absent lateral by implantation. As his lower incisors were extremely crowded and irregular it was determined to extract the right lower second incisor and to employ that as the scion tooth, which was successfully done on the 11th February, 1889. The condition of the opening field was healthy but very much absorbed; the periosteum seemed to be stripped off in several places. The pulp was not removed, and an interval of barely twenty-five minutes elapsed between the period of its extraction and implantation, and during which time it was kept in clean warm water without the addition of any antiseptic agent. No splint nor ligature was necessary. About five days subsequent to the operation the patient complained of great pain in the implanted tooth; the gum was swollen and inflamed. After applying a 50 per cent. solution of cocaine hydrochlorate to the gum a hypodermic injection was made of antipyrin one grain and nine grains administered internally. This, as was anticipated, led to an immediate increase of the pain; in half-an-hour, however, the patient left with the pain entirely relieved.

On March 7th it was evident that there was an abscess formation at the root of the implanted tooth. This was lanced and the pulp cavity trephined and the pulp removed.

About May 7th the patient noticed the formation of a fistulous opening on the labial surface of the gum without any pain.

A few days afterwards he consulted me about this, when I found that although there was not much pus on pressure there was a considerable abscessed cavity at the apex of the root. This cavity was thoroughly opened and syringed with Kingzett's solution diluted with peroxide of hydrogen. Two or three similar dressings were subsequently applied, and in August the patient presented himself for examination, when the fistulous opening was found to have completely closed. The tooth at present presents very much the same condition that it has all along, namely, that it is steady but moves on pressure; it never has presented that rigidity which has characterised most of the other operations.

Summary of Cases (Second Series).

In all eight cases with fifteen implantations; of these five teeth in two cases have failed in two, five, eight and twelve months, while two teeth in another case will possibly be lost ere long. In one case of four implantations there is no report. Most of these cases were unpromising from soon after the operation—either from lack of proper attention, from unfavourable conditions in the field of operation, or from the subsequent degeneration of the pulp. In eight teeth the pulps were not removed. Of these only one has possibly retained the vitality of the pulp, while in seven the vitality was lost. Subsequent removal of the pulp may be delayed too long.

Three such implanted teeth have been already lost, and at least two are known to be unsatisfactory. Despite the short interval of time between extraction and implantation, varying from twelve minutes to an hour, it is evident that the effort to retain the vitality of the pulp is contra-indicated, though it is permissible to postpone the removal of the pulp till the seion tooth is in position, with a view to rescuing the periosteum from the dangers of manipulation in filling the tooth out of the mouth.

General Summary.

1. The operation is still promising.
2. Great absorption of the alveolus, from its necessitating the leaving of but a thin layer of bone on the labial aspect, is a barrier to successful implantation.
3. The pulp should be removed at latest soon after the implantation.
4. The "mortality" seems greatest amongst young scion teeth.
5. It is desirable to ascertain the possibility of the successful implantation of unabsorbable roots which must necessarily be artificial and furnished with sponge grafts or carbolised gut leaders to promote bony attachment.
6. Nothing has as yet occurred to upset or even modify the general conclusions arrived at in the first paper, viz., p. 134.

Obligations.

To Professor Roy for use of pathological laboratory, &c,
To Messrs. Baldwin, Baker, Balkwill, Corbet, Gabriel.
Gartrell, Howarth, Jones, O'Connor and Rhodes for kindly
furnishing me with teeth suitable for implantation.

tical familiarity with the details of Mechanical Dentistry, under the instruction of a competent Practitioner, eighteen months of which instruction may be taken prior to the date of Registration as a Dental Student. In the cases of qualified Surgeons, evidence of a period of not less than two instead of three years of such instruction will be sufficient.

10. Of having attended at a recognised Dental Hospital, or in the Dental department of a recognised general Hospital the Practice of Dental Surgery during a period of two years.

11. Of being twenty-one years of age.

NOTE. — Professional study prior to the date of registration as a Dental Student is not recognised except in the case of instruction in the details of Mechanical Dentistry; see Clause 9.

Examination.

The examination is partly written, partly practical and partly oral.

The written examination comprises General Anatomy and Physiology, and General Pathology and Surgery, with especial reference to the practice of the Dental Profession.

At the Practical Examination Candidates are required to prepare and fill cavities with gold and other material, &c., and are required to provide their own instruments.

recognised general Hospital, the Practice of Dental Surgery during the period of two years.

10. Of being twenty-one years of age.

NOTE. — Professional study prior to the date of registration as a Dental Student is not recognised except in the case of Chemistry, Practical Chemistry and Materia Medica, and of instruction in the details of Mechanical Dentistry; see Clauses 3 & 8.

Examination.

The examination is partly written, partly practical and partly oral.

*The written examination comprises General Anatomy and Physiology, General Pathology and Surgery, Dental Anatomy and Physiology, and Dental Pathology and Surgery.

*At the Practical Examination Candidates may be examined—

- (a) On the treatment of Dental Caries, and may be required to prepare and fill cavities with gold or plastic filling or material, or to do any other

* These Regulations have been altered or re-arranged.

operation in Dental Surgery. (Candidates must provide their own instruments.)

(b) On the Mechanical and Surgical treatment of the various irregularities of Children's teeth.

(c) On Mechanical Dentistry.

The oral examination comprises the several subjects included in the curriculum of professional education, and is conducted by the use of preparations, casts, drawings, &c.

Members of the College, in the written examination, will only have to answer those questions set by the Section of the Board consisting of persons skilled in Dental Surgery; and in the oral examination will be examined only by that Section.

The oral examination comprises the several subjects included in the curriculum of professional education, and is conducted by the use of preparations, casts, drawings, &c.

*Candidates who have passed the Second Examination of the Examining Board in England, or who shall produce evidence of having passed the Examination in Anatomy and Physiology required for the Licence in Surgery of the Royal College of Surgeons of Edinburgh, the Royal College of Surgeons in Ireland, or the Faculty of Physicians and Surgeons of Glasgow, or an Examination in Anatomy and Physiology required for a Degree in Medicine or Surgery at a University in the United Kingdom, will be exempt from re-examination in those subjects.

*Candidates, who are Members of the College, or who have passed the Examination in Surgery of the Examining Board in England, or who shall produce evidence of having passed the Examination in Surgery for the Licence in Surgery of the Royal College of Surgeons of Edinburgh, the Royal College of Surgeons in Ireland, or the

* These Regulations have been altered or re-arranged.

Faculty of Physicians and Surgeons of Glasgow, or an Examination in Surgery for a Degree in Medicine or Surgery at a University in the United Kingdom, will be exempt from re-examination in General Surgery and Pathology.

A Candidate whose qualifications shall be found insufficient will be referred back to his studies, and will not be admitted to re-examination within the period of six months, unless the Board shall otherwise determine.

Examinations will be held in May and November in each year.

Candidates are required to give fourteen clear days' notice of their intention to present themselves for examination.

The fee for the Diploma is Ten Guineas.

NOTE.—A ticket of admission to the Museum, to the Library, and to the College lectures will be presented to each Candidate on his obtaining the Diploma.

A Candidate whose qualifications shall be found insufficient will not be admitted to re-examination within the period of six months, unless the Board shall otherwise determine.

Examinations will be held in May and November in each year.

Candidates are required to give fourteen clear days' notice of their intention to present themselves for examination.

The fee for the Diploma is Ten Guineas.

EDWARD TRIMMER, *Secretary.*

8th March, 1888.

N.B.—All applications with reference to the Examination for the Diploma in Dental Surgery should be addressed to Mr. F. G. Hallett, Secretary of the Examining Board in England, Examination Hall, Victoria Embankment, London, W.C.

REPORTS OF SOCIETIES AND OTHER MEETINGS.

The Odontological Society of Great Britain.

THE usual monthly meeting of the Odontological Society of Great Britain took place Monday, November 4th. The President, Mr. HENRY SEWILL, M.R.C.S., L.D.S., occupied the chair. There was a full attendance of members and a number of visitors, among whom were Mr. Christopher Heath, Dr. Felix Semon, Dr. Greville McDonald, Mr. Ball and others.

The minutes of the last meeting being read and confirmed, the CURATOR (Mr. Storer Bennett) drew attention to the skull of a young male Singapore rhinoceros recently added to the Society's collection, and pointed out the correlation which existed between the development of the incisor teeth and the horn. When the horn was absent, six incisors were present instead of the usual complement of four. He also showed models, the gift of Mr. Cormack, of Elgin, of the mouth of a man aged 105, showing that five teeth in the lower jaw still persisted. Dr. Talbot, of Chicago, had, the Curator stated, presented a number of models of regulation cases.

Mr. HARDING narrated a case of dermoid cyst of the ovary, in which six teeth and masses of hair were found, and commented upon the supposed origin of such structures being due to involution of the epiblast.

Mr. STORER BENNETT asked whether any member was acquainted with the microscopic structure of the teeth found in dermoid cysts, as he was not aware of any information to be found upon the subject.

Mr. HUNT, of Yeovil, mentioned the case of Highmore's in the Museum of the Royal College of Surgeons, in which a foetus was found encysted in the abdomen of a male.

Mr. GEORGE CUNNINGHAM (of Cambridge), stated he had met with a most remarkable case of dermoid cyst in Buda Pesth, in which permanent teeth were found and dental caries also existed.

Mr. ENGLAND then, in response to the chair, detailed the method he employed in perforating the antrum.

Dr. FELIX SEMON, F.R.C.P., then read a paper upon "Some Points in the Etiology, Diagnosis and Treatment of Empyema of the Antrum."

The disease, formerly regarded as rare, has of late years been frequently met with; probably formerly many cases of empyema antri were overlooked. Ziem, of Dantzic, published his first paper in April, 1886, and revived interest in the condition, and in a more recent communication (1888) detailed 227 cases. To show the frequency of the cases now treated, Fränkel is credited with operating on seven cases in three months; whilst Schmidt diagnosed sixteen cases in five months, Heryng ten cases in six months. Dealing with the question of the etiology of the disease, Dr. Semon believes that, although a few cases may originate from suppuration in the antrum itself, most are due to primary trouble

in the teeth or nose, the antral abscess being the secondary pathological lesion. Anatomically both of these are explicable, for the mucous membrane of the middle meatus of the nose is directly continuous through the ostium maxillare with that lining the antrum, while the fangs of both bicuspid, of the first molar, and sometimes of the second, are either separated simply by a thin layer of bone, or even may perforate the alveolus and be separated from the antrum by mucous membrane only. Extraction of one of these teeth may therefore tap the antrum (Fränkel). Hence, inflammatory troubles in the nose, or affecting the teeth, periosteum or alveoli, may determine suppurative inflammation in the antrum. As to the relative frequency with which these causes come into operation, opinions differ. Zuckerkandl believed infection usually came from the nose. Langenbeck saw two cases of antral purulent discharge consecutive upon section of the infra-orbital nerve, performed by Malgaigne's method, the orbita being incised. Fränkel holds that the determining cause of empyema in the majority of cases is diseased conditions of the dental alveoli. A common history is, according to Frankel: chronic alveolar periostitis exists, from which pus freely flows away until the opening becomes plugged by food or what-not; then retention follows, a slight but quickly passing pain is present, which diminishes as the opening into the antrum becomes established, and pus finds an outlet into that cavity. Again, Fränkel points out that the antrum is of all the accessory cavities of the nose the one most commonly affected—a fact strongly pointing in favour of the alveolar origin of the disease. And, finally, the same authority insists upon the important fact that, although the antral discharge is purulent, the nose itself is free from purulent discharge such as should exist if it had infected the antrum. While the consensus of opinion seems in favour of attributing the causation of empyema of the antrum to dental diseases, such as (Schech) caries, especially of the roots, alveolar periostitis, granular odontitis, formation of dental fistulæ, deficient dentition, ingrowth of teeth into the maxillary sinus, accidental, by pushing tooth into the sinus during attempts at extraction, and (Walb) attempts at over-conservation of the teeth, retention of roots beneath artificial plates and bad filling of teeth, yet some writers—Ziem, Bronner, Krause and others—incline to Zuckerkandl's view of the nasal origin of antral empyema. Bayer, of Brussels, draws attention to the common association of nasal polypi with purulent catarrh of

the antrum : of twenty-five cases in six polypi existed, while in two at least of these the teeth and alveoli were quite sound. Polypi, he believes, hang down and obstruct the opening into the antrum, and so lead to retention of its fluid contents. Dr. Semon's experience tells decidedly in favour of the dental origin of the disease.

With regard to diagnosis. Ziem has pointed out that (1) distention of the sinus ; (2) increased secretion when lying upon the healthy side ; (3) pain in the infra-orbital region ; (4) inflammatory swelling in the corresponding cheek, although often present, are not absolutely pathognomonic of antral empyema, while that condition may exist and none of these symptoms be present. Ziem further emphasises the importance in diagnosis of the following symptoms—the one-sidedness and periodical purulent discharge. One-sided discharge of course is absent in cases of double empyemata, but these cases are very rare. Uncommonly the discharge may be continuous. The periodicity is thus explained. When the patient lies down the secretion trickles down his throat, but when he sits up and leans forward it discharges by one nostril. The discharge is also foetid, is perceptibly so to the patient himself, often recognised by him sooner than by others, thus differing from ozæna. A putrid taste is at times complained of, and even nausea with loss of appetite. Neuralgic sensations may exist, but these are inconstant. Thus a dull heavy pain may be present over the frontal sinuses. At times transitory swelling over cheek is met with, and McBride has met with swelling of the gums. Pain may be referred to the bridge or root of the nose, the cheek, the ears or the teeth, while general depression, malaise and considerable constitutional disturbance are present. Objective testimony is not always easy. Sometimes with or even without cocaineisation the pus may be seen flowing from the antrum into the nose. When this is impossible the patient may be placed on his abdomen, supporting himself with both hands on the floor, the head not too low and the affected side uppermost. The nose must be thoroughly cleansed and the nostril be free from secretion. After remaining for from ten to fifteen seconds in this posture the patient sits in a chair, and the speculum being introduced, pus will be seen in the middle meatus if the discharge comes from the antrum. When the ostium maxillare is occluded—as it may be by hypertrophy or swelling of the nasal mucous membrane, by a polypus, or when the pus is too thick to transude through the

opening—the usual signs of empyema are absent. The sinus then becomes distended, and its walls thinned.

Bulging may then occur in the (1) zygomatic region, (2) the hard palate, (3) the canine fossa, (4) the inner wall, (5) the alveolar region above the molars, (6) below the orbita. The sensation of crackling may then be felt. Complete occlusion of the nostril may take place, and exophthalmos be produced. Lancinating neuralgic pains are commonly developed either in the face or the upper teeth, and swelling, sometimes erysipelas, occur. The obstruction may be temporary, then pain exists only whilst the discharge is checked, and is relieved as soon as a vent is found. Dr. Semon described a variety of methods whereby various observers have sought to establish the diagnosis in cases of empyema when the ostium maxillare is closed. Exploratory incision when needful should, he thinks, be made through the alveolar process or through the nose. If a diseased tooth, the roots of which lie in relation with the antrum, is present, or a gap where one formerly was, the antrum should be opened by a drill or trocar, after removal of the tooth. Other methods, such as drilling *between* the bicuspid, opening through the inner wall of the meatus, are not without their disadvantages. Heryng has quite recently aided diagnosis by transfacial illumination of the antrum. A small incandescent lamp of at least five volts attached to a tongue depressor is introduced into the patient's throat in a *perfectly dark* room. On establishing the current and closing the mouth the facial bones show up bright red, but if empyema is present remain quite dark. Only in one case when the bones were very thick did Heryng find this method fail.

Treatment—The method of drainage through the natural opening is too difficult and uncertain. The opening through the canine fossa which in 1885 Morton Smales found satisfactory has recently been advocated by Schech, who has cured cases otherwise incurable. As to whether it is preferable to open through the alveolus or the nose, opinions differ. Those in favour of the former—amongst whom is Christopher Heath—claim that in order to remove the true *cause* of the trouble, one or more teeth must be removed; this loss should be utilised to effect the required opening; (2) the opening so produced is the most dependent opening possible, and so the best drainage is produced; (3) the patient can carry out after treatment. Those in favour of the nasal opening state (1) often a

healthy tooth is needlessly lost; (2) or the running of pus into the mouth is a source of annoyance to the patient—an objection which Dr. Semon has not found to exist among his patients; (3) that the opening between the mouth and antrum is a source of dangerous contamination to the latter. However, Dr. Semon believes healthy teeth very rarely co-exist with antral empyema, and he thinks infection is as likely to occur through the nasal as the alveolar opening. The main objection against the nasal opening is the extreme difficulty of carrying out after-treatment when it is practised. An additional objection exists in the severe hæmorrhage which is liable to occur when the nasal opening is made.

The PRESIDENT remarked that formerly he was of opinion that cases of empyema of the antrum were rare, as when he had a large hospital experience few came under his care; more recently, however, he had changed his views, as they came pretty often under his care.

Mr. CHRISTOPHER HEATH, F.R.C.S., said that, after listening to the valuable compendium of recent work done in Germany and elsewhere, which Dr. Semon had placed before them, he was struck with how little things had altered since the time of Hunter, for his account of the disease was very much the same as what they had just heard from Dr. Semon. One point which he (Mr. Heath) must insist upon, was that purulent discharge from the nose was by no means always due to antral disease. Ordinary catarrh was common enough, but it was rare for antral or frontal disease to follow from it. Teeth, he believed, were most commonly the cause of empyema. He deprecated the extraction of healthy teeth, as an opening through the bone above the alveoli answered as well. For syringing out, an Eustachian catheter answered well, and a patient soon learnt to introduce it himself, as by sitting before a glass the opening was easily seen. He insisted upon the usual inadequacy with which the syringing out was performed. Patients would employ a vulcanite, or, still worse, a glass syringe, which last was dangerous from its liability to break. He preferred a larger and more powerful syringe. He felt disappointment that Dr. Semon had not been able to throw more light upon those troublesome cases where the ostium maxillare was wholly or partially occluded. Mr. Heath felt much doubt as to whether Heryng's method of transfacial illumination would prove reliable, as, from his experience of skulls, he felt convinced that there was too great a variation in the thickness of the

facial bones to allow of anything like universal success. Crackling as a symptom was, he thought, unreliable; in his experience it meant cystic disease of the antrum. He was sure that many cases of empyema were overlooked, and narrated a case of a good-looking woman who, after undergoing various operations for supposed nasal disease, was threatened with trephining over the frontal sinus, until coming to Mr. Heath, empyema was diagnosed, the pus let out, and a cure effected. Cases were often disappointing, and, in spite of all care, would drift on for years; some of these, he believed, resulted from excessive washing out causing chronic irritation.

Mr. WALLIS, after ten years' considerable experience, believed that the teeth were usually the cause of empyema, although not always, as he had recently met with a case due wholly to nasal disease. It was often possible to tap the antrum through the alveolus, even if the tooth had been removed some time previously, provided the maxilla had not shrunk too much. In a recent case a rapid and complete recovery took place after syringing for seven days. After wearing the tube for three weeks, and no pus coming, it was removed, but the trouble at once recurred and the tube had to be replaced. Mr. Wallis thought in cases of doubt it was right to open the antrum with a small drill, as, even if no pus was struck, little, if any harm, was done.

Mr. HENRI WEISS pointed out the anatomical peculiarity that often the antrum was divided into loculi by septa, and that this would account for failure to strike pus in exploring incisions, as well as the delay in healing which so often occurred, since the syringing might never effectually reach all the loculi.

Mr. GEORGE CUNNINGHAM thought they might assist the lecturer by telling him their experience of the frequency of these cases. In his own practice Mr. Cunningham had never met with a single case. He narrated a case in which the empyema had been overlooked. In obstinate cases he believed a second opening through the socket of another tooth and thorough syringing through would be useful. He emphasised that teeth, functionally useful, should not be removed, since other means of opening the antrum existed.

Mr. HERN thought an additional reason for establishing the alveolar opening was the liability of openings in mucous membranes to become closed. Patients also could, when the ostium maxillare was patent, wash out without any mechanism, which was a decided advantage. He regretted Dr. Semon had been unable to tell them

how the tedious length of time, consumed at present in the after treatment of these cases, could be curtailed.

Mr. MAGGS narrated a case of a young lady, aged twenty-three, supposed to have disease of the superior maxilla. She had lost both bicuspid and molar teeth, and suffered pain in the cheek ; there was a discharge from the nostril, and flattening of the roof of the mouth. A tooth was removed under gas, and pus and blood followed its removal. Syringing through this opening with carbolic acid lotion soon cured the trouble.

Mr. VAN DER PANT, of Kingston, narrated a case wrongly diagnosed as empyema, the purulent discharge being really due to diseased roots.

Dr. GREVILLE MACDONALD had found grave nose trouble in fifteen out of eighteen cases of empyema of the antrum and old inflammatory trouble in others. Subjective symptoms were often those of supra-orbital pain, always relieved by letting out the pus. Pain was sometimes elicited by percussion of the malar or nasal bones. Objective symptoms were often very difficult to be sure about. Pus in the middle meatus often came from ethmoidal disease, while what looked like a polyp was frequently an oedematous turbinate bone. He thought exploratory puncture was often justifiable in cases of doubt. In treating these cases he preferred the alveolar opening, as he had seen severe hæmorrhage from the nasal opening.

Mr. DAVID HEPBURN offered a practical hint. After opening the antrum he replaced the extracted tooth by a vulcanite substitute, which he drilled so as to have an infundibuliform opening into the antrum into which the patient could easily insert the nozzle of his syringe or a plug, as the case might be.

After some remarks by the President, Dr. Semon replied, and the proceedings closed.

The next meeting takes place December 2, when communications will be received from Messrs. J. Ackery and W. B. Paterson, "On a Peculiar Case of Fracture of the Superior Maxillæ ;" from Mr. E. Lloyd Williams on "A Case of Sarcoma of the Upper Jaw ;" from Mr. G. Cunningham, "On a Dermoid Cyst containing Teeth ;" also from Mr. C. S. Tomes, F.R.S., and Mr. D. Hepburn.

MINOR NOTICES AND CRITICAL ABSTRACTS.

The Title of Dentist.

IN the time of our fathers it was *de rigueur* for the medical practitioner to avoid, as far as possible, all titles which would specialise his professional function, and thus it became the fashion for all surgeons, of whatever colour, to call themselves "Mr.," and all physicians, whether university graduates or not, called themselves "Doctor." It was in fact the theory of the period, and of half a century afterwards, that every practitioner was as good a specialist as the other, and that a surgeon would be supposed to possess the combined erudition and dexterity of the ophthalmologist, the dentist, the gynæcologist, the laryngologist, and of every other species of the genus surgeon. Many a time have we listened, with concealed derision, to the enunciation of this dogma at introductory lectures, and even at the present time we are accustomed now and then to hear the statement that a student cannot effectively diagnose and physic a case of measles without a thorough exhaustive familiarity with the minute anatomy of the whole body. All this nonsense has been disposed of by the good sense of the public, and for the necessity for members of the profession to strike out into any line for which there is a public demand. The profession has, therefore, been split up into innumerable fractions, so much so, that every organ in the human economy has its specialist, and every disease under the sun its expert, an extreme which is, from a scientific point of view, nearly as objectionable as the old "Jack of all trades" idea. Medical titles have, however, not kept pace with this change to the fullest extent, for though we find many surgeons differentiating themselves by putting "Surgeon" or "Physician" on their door-plates and some obstetricians marking themselves as specialists by the term "Accoucheur," we do not see other specialists adopting designations which indicate their own particular line. A move in this direction has recently been made by Mr. Stack, of Dublin, who has laid his views on the subject before the British Dental Association, and published them in the Journal of that Association. His contention is that since the passing of the Dentists Act, the practitioner in dentistry who has obtained registration upon special examination is separated from all other practitioners of that speciality by a sufficiently clear demarcation line

to justify him and require him to adopt some definite mark of his special quality. Accordingly Mr. Stack has, himself, assumed the title of "Dentist" Stack, and has placed on his door a name plate bearing that designation, and his example has been followed by two other members of the dental speciality in Dublin. He expresses the opinion that, on all those who are anxious to support and uphold the Dentists Act, the duty is devolved, in the interest of the dental profession, to make clear, and as easily understood as possible, who are those who have a right to the title "dentist." With this purpose Mr. Stack appeals to his professional brethren to make clear to the public not only that they are not either unqualified pretenders who have been raised by an Act of Parliament to the dignity of professional men, nor yet simple surgeons whose knowledge of dentistry is nothing more than the rule of thumb acquaintance which every surgeon is supposed to possess. We are in sympathy with the idea that a spade should be called a spade in medical as well as other matters, but we are not quite clear that the profession is called upon to show the way to other professions in the matter of titles. However desirable it may be to proclaim one's business in unmistakeable terms, we do not find that barristers decorate their doors with the inscription "Lawyer" Jones, "Attorney" Brown, or "Parson" Robinson. True, none of these gentlemen, save the solicitor, have their status defined, as the dentists have, by Act of Parliament, but nevertheless the analogy is against Mr. Stack's proposition.—*The Medical Press.*

Another Bogus Diploma Mill in the United States.

THE *Chicago Times* reports that a great sensation has been produced in Portsmouth, New Hampshire, by the discovery of another actively maintained bogus College of Medicine, similar in management to and larger in extent than the one fully exposed a few years ago. It is stated that any person having the necessary money could have a diploma in medicine and surgery from various institutions named which exist only on paper. The discovery of the fraud has been made by Dr. D. S. Adams, Chairman of the State Board of Censors. The whole subject is now under investigation by the authorities of the State. It is of great moment for the United States that all such cases should be thoroughly ex-

posed, and that Congress itself should take some steps to maintain the standard of medical education and to punish fraudulent dealers in degrees and diplomas. We shall be glad to ascertain the result of the investigation.—*Lancet*.

ANNOTATIONS.

THE present issue of the Journal has been delayed in order that we might lay before our readers the important decisions which were arrived at on the evening of the 14th instant at the Council Meeting of the Royal College of Surgeons of England. The importance of the news was considered sufficient to warrant delaying the publication of the Journal.

A MEETING of the Representative Board will be held at 40, Leicester Square, on Saturday, November 30th, at 3 o'clock p.m. This date has been arranged to suit the convenience of Members from the country who may wish to attend the Annual Students' Dinner in the evening, and be present at the Meeting of the Odontological Society on the following Monday.

THE DENTAL HOSPITAL OF LONDON.—The Annual Dinner of the staff and past and present students will be held on Saturday, November 30th, at the Holborn Restaurant, under the presidency of Christopher Heath, Esq. Gentlemen either now or formerly connected with the Hospital or Medical School, who may, through inadvertence not have received special notice, and who desire to be present, are requested to communicate with the Dean, at the Dental Hospital, 40, Leicester Square.

ROYAL COLLEGE OF SURGEONS OF ENGLAND : PASS LIST.—The following gentlemen, having passed the necessary examinations, were at an ordinary meeting of the Council on the 14th instant admitted Licentiates in Dental Surgery, and received their diplomas, viz. :—

Messrs. Ambrosoni, Francis Angelo, 32, Grand Parade, Brighton, Dental and Charing Cross ; Bright, Stanley Charles, 11, Via Assarotti, Genoa, Italy, Dental and Charing Cross ; Carter, Edward George, 181, Edgware Road, W., National Dental and Charing Cross ; Cowell,

Charles Joseph, Christian Road, Preston, Lancashire, Dental and Charing Cross ; Day, Joseph Henry, 3, Alfred Street, Montpelier Square, Brompton, S.W., Dental and Charing Cross ; Dunlop, James Nairn, 120, Lord Street, Southport, National Dental and Charing Cross ; Haycroft, Frederic Theodore, 9, South Lawn Terrace, Heavitree, Exeter, National Dental and Middlesex ; Harper, Henry Guy, 21, Charleville Road, West Kensington, W., Dental and Middlesex ; Knowles, Albert Vernon, 63, Albion Place, Reading, Dental and Charing Cross ; Mallet, John Aubrey, Powderham Crescent, Exeter, Dental and Charing Cross ; Parrott, John Ernest, 383, Hagley Road, Birmingham, Birmingham ; Richardson, Frank Victor, Kibworth, Leicester, Dental and Middlesex ; Seville, John William, Scout House, Mossley, Manchester ; Spray, George Goldfinch, 8, Conway Road, Canton, Cardiff, Dental and Charing Cross ; Stoddart, Walter George, 27, Lower Seymour Street, W., Dental and Charing Cross.

Twenty-five Candidates presented themselves for this examination, of whom fifteen passed and ten were referred. The next examination will be held in May, 1890.

FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—The following gentlemen having passed the Examinations for the licence in Dental Surgery were duly admitted Licentiates on October 19th :—John Newsome Baxter, 3, The Cedars, West Kensington, London, W. ; Harry Fielden Briggs, D.D.S.Mich., 6, Park Crescent, Torquay ; Alfred Dulling, 46, Hessle Road, Hull ; Horace Herbert Elliott, 21, Kilburn Square, London, N.W. ; Thomas Furness, Chesterfield ; Ernest Latham, 397, Oxford Street, Manchester ; Alfred Buckwold Grover, 145, Western Road, Brighton ; Thomas Henry Taylor, 23, Gauze Street, Paisley ; George Adam Watt, 20, Lynn Street, West Hartlepool. Two candidates were referred at the first part of the examination, and three at the second part.

STUDENTS' SOCIETY NATIONAL DENTAL HOSPITAL.—The last ordinary monthly meeting of this Society was held on Friday, October 11th, 1889, at eight o'clock, Sidney Spokes, Esq., president, in the chair. The minutes of the previous meeting were read and confirmed. Mr. Hemstead was present as a visitor. The names of the following gentlemen were given out, as being nominated for election at the next meeting :—Messrs. Andrews, Hemstead and Smith. Mr. Fred T. Haycroft, owing to his

leaving the Hospital, tendered his resignation of the Treasurership. It was accepted and a vote of thanks was accorded him for his past services, to which he replied. Mr. Arnold Prager was proposed and seconded by Messrs. Dunlop and Faro as Mr. Haycroft's successor, which was carried unanimously. A sub-committee was appointed for the purpose of making additions to the library. *Casual Communications*.—The following gentlemen showed cases of interest; Messrs. E. A. H. Field, Haycroft, Faro, Arnold Prager. The President then called upon Mr. Humby for his "Notes on some Cases in Practice" which he had at a very short notice (in consequence of the gentleman who was to have read a paper being unable to attend) kindly undertaken to read. They were most interesting, and included the following:—1. A case of retained temporary incisor. 2. A non-erupted lower bicuspid. 3. Two specimens of split teeth (molar and bicuspid both had been filled). 4. A matrix and engine-mallet (right-angled) for use in filling incisor teeth from the lingual surface. 5. A case of perforation of both hard and soft palates. 6. Crowning a canine stump for a deaf patient, who used an audiphone, and made use of stump in question to hold the instrument in place. Mr. Humby was accorded a hearty vote of thanks for his kindness in bringing these cases forward, and after the usual discussion the meeting adjourned till Friday, November 1st, when Mr. T. G. Read read a paper on "Crowning and some Useful and Practical Hints."

THE first Annual Meeting of the fifth session of the Edinburgh Dental Students' Society was held in the Dental Hospital on November 4th, Mr. J. G. Munro, L.D.S., President, in the chair. The inaugural address was delivered by the Hon. President, James Macintosh, Esq., and a paper entitled "Syphilis in relation to the Teeth" was read by Mr. J. W. Daniels.

THE programme for the session 1889-90 is as follows:—December 2nd, 1889—"Bacteriology of the Mouth," G. W. Watson; "Irregularities of the Teeth," A. E. Donagan. January 13th, 1890—"The Teeth as Prehensile Organs," J. D. Watt; "Fruits of the Dental Act," John Turner. February 3—"Gold Filling," H. B. Ezard; "A Case of Bridge Work," William Gray. March 7—"Root Treatment," J. G. Munro.

THE first ordinary meeting of the Odonto-Chirurgical Society (Session 1889-90) was held in the Rooms, 5, Lauriston Lane, Edinburgh, on Thursday, November 14th, at 8 p.m., John A. Biggs, Esq., L.D.S., President, in the chair. *General Business* :—Presidential Address; "An Accident in Tooth Extraction," communicated by Mr. F. Page, L.D.S.; a Casual Communication, by the President.

THE first meeting of the Edinburgh Dental Students' Society took place on Monday, November 4th, J. Graham Munro, L.D.S., President, in the chair. A short address was given by J. Mackintosh, Hon. President, which was followed by a capital paper on "Syphilis in Relation to the Teeth" by J. W. Daniels.

EDINBURGH DENTAL SCHOOL.—The number of new entries at this School for 1889 is fifteen.

THE annual dinner and distribution of prizes in connection with the National Dental Hospital and College was held Nov. 8th, at the Holborn Restaurant. Mr. Henry Morris presided. We hope to give a full report in our next number.

J. B. EMMERSON, writing to the *Lancet* of Oct. 26th says, "I was called to-day to remove two lower incisors from the mouth of an infant aged twenty-two days. They were there at birth and had become so prominent and loose that the mother was anxious to have them removed. I enclose them with the letter, and may add that it is by no means the first case in my experience."

THE *Lancet*, quoting Dr. Paul Börner's "Reichs-Medicina Kalender für Deutschland" for the year 1888, states that there are 16,864 medical men and 514 dentists in practice among a population of 46,840,587 inhabitants in the German Empire, while the number of chemists' shops is 4,671, and of hospitals 2,737. In face of these figures it may be truly said that the dental profession is not overcrowded in the Fatherland.

DEATH UNDER ANÆSTHETICS.—It is much to be regretted that the recent death under nitrous-oxide gas should have been made

the occasion of such an outburst of foolish commentary on the part of the lay press. The articles are evidently written in great haste, and by persons who have no accurate knowledge of the subject; they are generally interspersed with a few jokes, and absolutely bristle with statements of such ludicrous inaccuracy as to betray at once the handiwork of the most mischievous of all amateurs—the amateur in medicine. Yet, although any medical man with even a slight knowledge of anæsthetics can detect the absurdity of most of this stuff, the public, who repose unbounded faith in “what the paper says,” swallow it all as science. They know that the staff of the daily paper ought to entrust the writing of such articles to experts, and therefore they suppose that this is done, and so the alarmist nonsense is received as truth, and much unnecessary suffering is entailed upon the public.

THE unfortunate case to which we have already alluded could scarcely be called a death from nitrous-oxide gas. The patient was a lady advanced in years, she had advanced fatty disease of the heart, her stomach was full of undigested food, her stays were so tight that they had to be cut off, and lastly she came with a strong prepossession that she was going to die under the operation, and her friends knew of the prepossession. There is here a combination of the most sinister circumstances. Nitrous-oxide may be given to a person with a fatty heart with safety, but no person who has a fatty heart can undergo a great shock while respiration is hindered and the stomach is full of undigested food, and the mind terrified and oppressed with forebodings of death. The extraction of a tooth without an anæsthetic would be still more dangerous than the exhibition of nitrous-oxide—the greater the shock the greater the danger, and certainly nitrous-oxide gas diminishes the shock. Is it not a breach of trust on the part of the morning “dailies” to permit disquisitions upon the subject that might have been written by a medical student (of a week’s standing) to his sister, to appear with all the weight of editorial authority, and to disseminate crude frivolities as learned facts among the uninformed public. In our eyes it is an immoral transaction.

THE Harveian Lectures will be delivered on November 21st 28th, and December 5th, by Mr. J. Knowsley Thornton, the subject being "The Surgery of the Kidney."

STATEMENT of operations performed at the Dental Hospital of London, during the month of October, 1889.

Extractions :

Children under 14	...	...	...	...	477
Adults..	...	...	...	...	982
Under Nitrous Oxide...	...	...	...	...	1063
Gold Fillings	...	...	...	...	510
Other Fillings	...	...	...	...	1459
Irregularities and Advice	...	...	...	...	179
Miscellaneous	...	...	...	...	533
Total	...	...	...	...	5203

FRANK C. PORTER, *House Surgeon.*

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our Correspondents.

Groves and Thorp's Chemical Technology.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—The writer of the part of this work referring to coal gas has made use of my name pretty freely, but apparently the bulk of his quotations are from old trade lists, which are not usually the sources from which theory and calculations are likely to be obtained for a work on Chemical Technology, and this is probably the reason why the article in question is so very deficient in necessary information. On page 431 it is stated, "there exists no information as to the influence exerted by the shape and dimensions of the gas nozzle, and of the delivery tube for the mixture of gas and air"—"there is no rule to guide in fixing the proportion." Any one who is at all conversant with the subject is fully aware that this matter was worked out by myself, and that the full details of the theoretical construction of burners are given in the transactions of the Gas Institute for 1883. Another serious error is the analogy the writer attempts to draw between light and heat from coal gas, the conditions as regards pressures and other matters being in many cases exactly the reverse of each other.

It is well known that the practice of heating by gas is in a state of rapid transition and evolution; this is too much for the writer of the article, who specifies a pattern four years old and quite superseded

as the "newest." On page 401 I am made to say, that gas fires cost from 1d. to 4d. per hour ; this might have been true years ago, but it is very far indeed from the truth now. Out of sixty modern gas fires tested by myself, the maximum consumption of the largest was 40 cubic feet per hour at $\frac{1}{10}$ pressure, which at 2s. 1d. per 1000 cubic feet is exactly one penny per hour ; the minimum consumption of the smallest is seven feet per hour, being about one penny for six hours.

The writer makes several remarks about absence of proof and figures for certain statements made in trade lists, whilst his own statements as to the relative radiation of coal fires and gas fires are not only vague, but are on the face of them absolutely incorrect and incapable of proof, and states that he does not know why I call a stove a gas fire. As I never did such a thing, I should be curious to know where he got his information from.

It is not at all necessary to evolve a new theory as to the general antipathy to stove or convected heat being "prejudice or rays of less refrangibility ;" even "old trade lists" would have explained that with convected heat the lower part of the room is always the coldest, and cold feet and heated upper extremities are not conducive to comfort. If the writer had copied the American habit of lifting his feet out of the colder air near the floor level, he would have understood that no new theory was required and that the cause is very well known.

THOS. FLETCHER, F.C.S.

Unregistered Practitioners.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—At a meeting of the Midland Branch held at Halifax, a very interesting paper was read by Mr. Alfred Cocker on "Unregistered Practitioners." There was very little discussion upon the paper, and no hints thrown out or any means of putting down "quackery" suggested. It is well known to most of us the various devices that the unscrupulous but ingenious quack uses to evade the law and to gull the British public ; such as "the Tooth Stores," "The Crown and Bridge Company," "Dental Supply Association," &c., being amongst their favourite designations. Then we have the advertising registered man, who opens up branches and puts unregistered men to manage them for him, or starts an unregistered man and allows his name to be used for some pecuniary remuneration. Again we have these unregistered men getting charge of practices, which are to be kept on for the benefit of a widow and children, the name of the deceased dentist still on the door, and "Mr. Smith, Manager," at a good salary and commission.

Now knowing that these things do exist, how is it that so few cases are brought before the Association ? Because few men care to take the

trouble to look up the cases ; the seniors, or men in good position, because they are not in any way injured by the quacks ; the younger men because they think it will be said they are jealous, or do it out of spite ; and others because they will not or cannot look after their own interests, but leave it to their seniors. Then upon whom does the duty of purifying our profession devolve ? Why upon *every* member of the Association respectively and connectedly : respectively, because every member can give a helping hand either by advice, suggestions, &c. ; connectedly, because we can work upon the best advice, pick out the best suggestions, and formulate the best plans of attack. I would suggest, as we have members in nearly all parts of the United Kingdom, that each Branch should appoint one or more members in every town, to look up, obtain all the evidence they are able to get together against each unregistered practitioner, and make their report to their respective Branches, have a list drawn up and placed before the members at their meetings. Let the Association take eight or ten cases from the lists and prosecute all at or about the same time ; the daily and weekly papers would then take it up, and so the British public would be led to wonder and ask questions, and would so find out how they are gulled by the so-called "Dental Supply Associations," &c.

I am, Yours truly,

A SUGGESTER.

P.S.—I enclose my card.

Students' Society, Manchester.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—In connection with the above Society, there has been gradually developing from local generosity a library and museum. With an object of further increasing their manifest usefulness, a wider appeal is now justified in being made, not only on account of the increased number of students, but the library, though consisting of standard works, numbers yet merely some few copies. Therefore all gifts of books, pathological specimens, casts, photos, old instruments, wolrabs, bottles, &c., will be most welcome to the council, and on its behalf I shall be most happy to acknowledge their receipt.

Yours truly,

*The Students' Society,
Victoria Dental Hospital,
98, Grosvenor Street,
Manchester.*

DAVID HEADRIDGE,
Librarian and Curator.

Iodoform: Its Actions and Uses in Dental Surgery.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—Permit me to point out an omission in my paper published in your last issue. "When the nerve for some unknown reason has lost its vitality, we have never found it in a state of putrefaction. It has been mummified or moist, BUT PERFECTLY SWEET AND SMELLING STRONGLY" [OF IODOFORM] should have been added.

I am, Sir,

Your obedient servant,

17, *Railway Approach*,
London Bridge, S.E.

R. DENISON PEDLEY.

APPOINTMENTS.

MORTON SMALE, M.R.C.S., L.D.S., has been appointed Examiner in Dental Surgery at the Royal College of Surgeons of England, it having been considered expedient to raise the number of examiners on the dental side from three to four.

C. H. SMALE has been appointed to the post of Dental House Surgeon to the Victoria Dental Hospital, Manchester, *vice* Mr. P. A. Linnell resigned.

ISIDORE F. PRAGER, L.D.S., has been appointed Dental Surgeon to the Western General Dispensary, Marylebone, W.

W. FORRESTER has been appointed on the Senior Staff of the Edinburgh Dental Hospital, *vice* J. Lindsay, L.D.S., resigned; and F. Page, L.D.S. has been appointed on the junior staff, *vice* W. Forrester, promoted.

GEORGE H. ANDERSON has been appointed Dental Surgeon to the Eccles and Patricroft Hospital (there has been no previous appointment).

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

Subscriptions to the Treasurer, 40, Leicester Square.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE.—All communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

No. 12.

DECEMBER 16, 1889.

VOL. X.

Dental Hygiene.

IT has been said by a great authority that when a student leaves his hospital and finds himself face to face with the fee-paying public, he discovers that he has so much to unlearn and so much to learn that for a time he is very much at sea, unless indeed he be armed with impregnable conceit, and so rendered proof against the lessons of experience. One of the first of these lessons undoubtedly is that actual cases that we are called upon to treat, the living people who crowd (let us hope they crowd) into our consulting rooms, eager for our skill and advice, are not classified as neatly as they are in books or in lectures. We hope we have too much common gratitude to forget the ladders by which we climbed to our diploma, but without wishing to utter one disrespectful word towards handbooks and lectures we must confess that from un-

avoidable causes they are liable to fall into an error which they share with a certain class of novels, namely, that of making their characters too typical. For examination purposes this is much the simplest plan, but just as when you turn from the novel to real life you do not find the people labelled exactly all "religious," "libertine," "virtuous hero," "designing hussy" and "innocent, constant heroine," so when you put away your student books and mingle with the great world of patients you do not find them all clearly "strumous," "syphilitic," "hysterical," and so forth; in both cases we find the human being a very mixed quantity.

Another side issue, if we may venture so to speak of it, that is forced upon our attention as we grow older, is that whereas we have learnt, to a great degree of perfection, how to deal with all sorts of conditions of caries, exostosis and other tooth diseases when they are brought to our notice, there is a great field of knowledge not nearly so thoroughly explored, namely, how to deal with the conditions that predispose to such catastrophes, how to advise our patients as to their mode of life, so that they themselves may best avoid the dangers that surround them, and how, if their lot has relegated to them the forming of the habits of the next generation, they may best acquit themselves of the task. For an interesting review of this side of the question we cannot do better than refer our readers to a recent address by Mr. Browne-Mason, of Exeter, which appeared in our October number. To treat caries is, after all, only being wise after the event; to prevent it is better. We all know that from the earliest infancy, when the permanent teeth are being formed, their future strength or weakness is being decided for ever, for whatever the exciting causes may be, the predisposing causes are really the first causes. If we could so regulate the diet of the mother and

of newly-born infants that the greatest possible amount of lime salt were supplied in the most assimilatable form, we should be doing more to stamp out dental caries than by any amount of clever inventions to counteract its ravages. We all know that the initial periods of menstruation and the commencement of pregnancy are especially destructive to the dental tissues, and by modifying the mischievous tendencies of these periods, we should truly confer a great blessing upon mankind. We live in an age when the utmost science is expended in producing food stuffs suitable to all these contingencies; and it is a part—a very great part—of our business to know the value and applicability of each. We ought to be fully prepared to pronounce on the right dietary for the pregnant mother, the adolescent girl and the newly-born infant, with authority and with common sense. Experimental chemistry is being ransacked every day to find solutions to these problems; it is our part to be abreast of the times and to be able to advise on all these points. Sensible advice upon such matters may do more good than the most skilful struggles to deal with the mischief when it has once occurred—struggles that too often partake of the nature of shutting the stable door after the horse has escaped.

But while by judicious treatment we endeavour to preserve the health of our patients, we must not forget our own, and we hope on a future occasion to inflict some generalisations upon this subject also on our patient readers.

We are asked to state that there is a vacancy for a House Surgeon at the Dental Hospital of London. Applications from L.D.S.'s only must be sent in on or before the 18th of December.

ASSOCIATION INTELLIGENCE.

Meeting of the Representative Board.

A MEETING of the Representative Board was held on November 30th, J. SMITH TURNER, Esq., in the chair. There were present: Messrs. Ackery, Storer Bennett, F. Canton, W. H. Coffin, D. Hepburn, W. Hern, L. Matheson, C. S. James, S. Spokes, F. Weiss, C. West, W. H. Woodruff, and the Hon. Secretary (London); Messrs. E. L. Dudley (Bath); W. Palethorpe (Birmingham); J. H. Redman (Brighton); G. Cunningham (Cambridge); R. P. Lennox (Cambridge); J. C. Oliver (Cardiff); M. Hughes (Croydon); W. B. Pearsall and R. J. Stack (Dublin); W. B. Macleod (Edinburgh); H. B. Mason (Exeter); J. N. Brownlie and Rees Price (Glasgow); H. C. Quinby (Liverpool); R. F. King (Newark); J. Renshaw (Rochdale); W. E. Harding (Shrewsbury); E. Apperley (Stroud); W. B. Bacon (Tunbridge Wells); W. A. Hunt (Yeovil); T. E. King (York). Excuses were read from Dr. John Smith (Edinburgh), Messrs. W. Campbell, Cornelius Wheeler, and Lee Rymer.

Counsel's opinion upon the use of the title L.D.S. with the qualification "late" by those persons who have resigned or been deprived of their diploma, was read and ordered to be entered on the Minutes.

The TREASURER reported a balance of £499 19s. 10d., and that 67 members were in arrear for one year and 20 for two years.

Mr. T. E. KING made a statement about his unavoidable absence from Brighton, and that he would ensure the proposal of his resolutions at the next Annual Meeting.

The members of the Journal and Finance Committee were re-elected.

It having been decided that only members of the Representative Board could be elected members of the Business Committee, the following gentlemen were elected to serve on that Committee, in addition to the ex-officio members: Messrs. Coffin, Matheson, Tomes (re-elected), D. Hepburn, W. Hern, S. Spokes, G. Cunningham, T. E. King, and J. H. Redman.

Mr. COFFIN gave notice that at the next Board Meeting he would move that the Business Committee be elected from the members of the Association, and not only from members of the Board.

Mr. Butcher was re-elected auditor.

The PRESIDENT having made a statement detailing the policy pursued by the Business Committee in regard to the prosecution of offenders against the Dentists Act in the past, wished for an expression of opinion from the Board as to the line of conduct to be followed in the future.

The Board expressed an opinion that the course hitherto adopted should be continued.

It was decided to refer the further consideration of Mr. Fisher's resolutions to a sub-committee consisting of Messrs. Cunningham, Hern, Matheson, Spokes and E. Lloyd Williams, who should report to the next Board Meeting the result of their deliberations.

The consideration of Dr. Rentoul's propositions was referred to the Business Committee.

Mr. OLIVER gave notice that at the next meeting he would move the following resolutions :—

I. That the Board, believing that a wide and general dissemination of knowledge in relation to the teeth and their preservation would be of incalculable advantage to the community and to the profession, conducing to a general adoption of conservative measures for the preservation of the teeth, are of opinion that this end can be best promoted through the Association providing an educational code for public use.

II. That the Committee on the "Dental Aspect of Public Health" be instructed to draw up and present the same for approval and adoption at the next meeting of the Board.

Mr. Waite having resigned the office of Secretary of the Midland Branch, on the motion of the PRESIDENT, seconded by Mr. QUINBY, it was decided to express to Mr. Waite the regret of the Board for the cause that necessitates his resignation and its thanks for his valuable past services to the Association.

Mr. Redman presented an album of the Brighton Meeting arrangements, which was duly acknowledged by the CHAIRMAN.

The following gentlemen were elected Members of the Association :—B. J. Bonnell and W. Mitchell.

Midland Branch.

At a Meeting of the Council of the above Branch held in Manchester, Nov. 23rd, Mr. Waite reluctantly tendered his resignation as hon. secretary, owing to his increased inability to discharge the more important duties of the office.

Mr. H. CAMPION expressed in feeling terms the sincere regret which the Council felt in losing the valuable services of Mr. Waite, but seeing that the loss was inevitable, he moved that the resignation be accepted.

Mr. S. WORMALD and several other of the members concurred.

Mr. I. Renshaw, Rochdale, was unanimously elected hon. secretary, *pro tem.*

West of Scotland Branch.

THE annual general meeting was held in the Grand Hotel, Charing Cross, Glasgow, on Thursday, November 28th, at 5.30 p.m., JAMES CUMMING, L.D.S.Glas., President, in the chair.

William Wallace, M.A., M.B.C.M., L.D.S.Glas. (Glasgow); and John Dunlop, L.D.S.Eng. (Kilmarnock) were unanimously elected members of the Branch.

James Wallace (Dundas Street, Glasgow); William Douglas Wyllie (Glasgow); William Paterson Gillespie, M.B.C.M.Glas. (Glasgow); John Foulds, L.D.S.Glas. (Glasgow); William Taylor, L.D.S.Glas. (Glasgow); Thomas Henry Taylor, L.D.S.Glas. (Paisley), were proposed for membership of the Branch.

The Hon. Secretary then read his report as follows :—

There has to be recorded the resignation of two members, and the death of Mr. B. Sutherland, an original member of the Branch and a former member of Council.

Two new members were elected into the Branch during the year, but recently the Council appointed a Visiting Committee, to ascertain if more members of the profession could not be induced to join the Association and Branch. This Committee has hitherto confined itself to Glasgow. Some eighteen practitioners were visited and the result has been the accession of six gentlemen to the Association, with the possibility of others on further consideration.

Five cases of infringement of the Dentists Act were, during the year, under the review of the Council. There has been one prosecution in Glasgow by the authorities in London and that a successful one. So far as the Council know, there is no infringement of the Dentists Act now going on in Glasgow. A recent case of registration under Clause 37 has come under its consideration, and it is a question, having in view the little effect

representations in London seem to have on the General Medical Council, whether something could not be done by a deputation from the Scotch branches to the members of the General Medical Council representing Scotland.

Eight Council meetings and five meetings of the Branch have been held during the year.

The Council unanimously advises the meeting to accept the proposed alterations of Rules X., XII.

The Treasurer reported a satisfactory balance.

Certain alterations of rules were agreed to, and two letters were read from Mr. Woodhouse, the Treasurer of the Benevolent Fund. After considerable discussion it was decided to leave in abeyance the question of a box for contributions at the meetings to the Benevolent Fund.

The office-bearers for 1889-90 were elected:—President, J. Moore Lipscomb, L.D.S.Eng. (Kilmarnock); Vice-President, W. F. Martin, L.D.S.Glas.; Treasurer, D. R. Cameron, L.D.S.Glas.; Members of the Representative Board, W. S. Woodburn, L.D.S.Glas.; J. A. Biggs, L.D.S.Glas.; J. R. Brownlie, L.D.S.Eng.; Council, Oswald Fergus, L.D.S.Glas.; William Dall, L.D.S.Glas.; John Stirling, L.D.S.Eng. (Ayr); Alex. Fraser, L.D.S.I. (Largs); James Cameron, L.D.S. (Glasgow); Andrew Wilson, L.D.S.Edin. (Edinburgh); Hon. Sec., Rees Price, L.D.S.Eng. (163, Bath Street, Glasgow).

Twenty-eight members afterwards dined together in the hotel, under the chairmanship of Mr. J. Moore Lipscomb (Kilmarnock); Mr. James Cumming (Glasgow) acted as croupier.

ORIGINAL COMMUNICATIONS.

Dental Education.

By F. NEWLAND-PEDLEY, F.R.C.S., L.D.S.,

DENTAL SURGEON AND LECTURER ON DENTAL SURGERY TO GUY'S HOSPITAL.

THE great change that has come over the aspect of Dental Education owing to the recent alterations in the requirements for the L.D.S.Eng., which now include practically the whole of the subjects of the first and second professional examinations for the conjoint diploma, marks a closer relationship between the new special branch and its parent stock; the existence of a dental school within one of the great metropolitan hospitals indicates

that dentistry is becoming an integral part of the great healing art, medicine.

Few would be inclined to doubt that the social and professional position of the dentist would be greatly improved if the medical world were prepared to accept him as a true specialist in surgery, but it would be vain to flatter ourselves with the belief that this condition exists or is likely to exist whilst our education is narrow and contracted, and the special development lacks a broad firm basis on which to rest. Nor can we say that very much is known about our schools, for they are enclosed within special hospitals where few of the uninitiated penetrate, and anyone can easily convince himself that medical men know little or nothing about dentistry, except as patients, beyond what they saw in the special departments of their medical schools. Can we hope that they carried away very exalted impressions concerning our work, and the manner in which they saw us do it?

The new regulations will guarantee for the dental students a thorough general education, the nature of which every one will understand. When they have completed the curriculum for the conjoint diploma in those subjects embraced within the second professional examination, in addition to the lectures on surgery, clinical surgery, and medicine, necessary for the L.D.S., it will be strange indeed if many do not voluntarily complete the requirements for the L.R.C.P., M.R.C.S., as well as the dental licence. The time may not be far distant when dentists will be required to take a medical qualification before the L.D.S.

Such considerations would have to be disregarded if it could be shown that it is not possible for general hospitals to contain dental schools, or that the special practical training of a student cannot be carried on as well, or better, in a medical school as in a special hospital. The first of these two points has been settled definitely by the organisation of a complete dental school at Guy's Hospital, modelled to meet what were felt to be inevitable changes in dental education. Little doubt need exist on the second point. There can be no question about the great convenience students find in getting all their lectures and practice under one roof, but it must in fairness be pointed out that the special hospitals have enjoyed an advantage in harmonizing their hours of lectures and practice to meet those of certain general hospitals conveniently situated, so that dental students could devote their whole mornings to dental work and their afternoons

to general lectures, &c. To meet this it was arranged that the conservation room at Guy's Hospital should be open daily from 9 a.m. to 3 p.m., even in the winter, patients being seen by appointment. Assuming that dental students can only work in hospital from morn till eve, and only a portion of their time is occupied by medical studies, they are at liberty to perform dental operations by appointment at whatever time is most convenient to them. As one of the results of the new L.D.S. regulations a somewhat similar arrangement of extended hours for dental practice is likely to become universal.

In place of the special orders in vogue at the Dental Hospitals, it was decided to make a charge to cover the actual cost of materials used in filling teeth, and for nitrous oxide gas; and had not this system been carefully safe-guarded by certain restrictions, an injustice would have been done to the dental practitioner, for patients of any class might have come to the hospital and obtained an extraction under gas for sixpence, or a plastic filling for less. But in the dental department of Guy's Hospital no patient can obtain conservative treatment or anæsthetic operations without the special recommendation of one of the dental officers. Under such circumstances it lies entirely with the dentists to see that the objects of the charity are not abused. A certain discretionary power in dispensing with payment of any kind under urgent circumstances is, of course, reposed in the dental officers.

So far the medical school found no difficulty in meeting the needs of the dental students, and attention was directed to what has long been admitted to be the greatest defect of modern dental education, viz., that we have never been able to cope thoroughly with the teaching of "dental mechanics." Every dentist must feel that it is of the utmost importance that students should be good mechanics and should be taught not only the mechanical processes of the work-room, but the equally necessary acquirement of taking models for patients, making "bites," and fitting and adjusting dentures in the mouth. It is rather sad to admit that the "L.D.S." goes into practice with very hazy ideas on this department of his work, and the less said on the subject the better.

Hitherto the explanation has been that the supply of artificial teeth to out-patients would be an injustice to dentists in small practice, and would lead to all sorts of undesirable complications in the Dental Hospitals themselves. These difficulties disappear in a general hospital, where there are always a number of deserving

cases and whose circumstances are known. One may mention how often nurses are seen in the extraction rooms as patients, and how rare it is to find them wearing artificial substitutes of even the poorest type for the teeth they have lost. Nothing whatever will be paid by the patients for whom dentures are made, nor will the expense involved be great, for there is a form of diatoric tooth that is phenomenally cheap and very serviceable in the molar and bicuspid regions. Some of the most instructive cases for students are those in which the back teeth are lost and the patient has acquired irregular movements of the lower jaw in mastication, so as to be said "never to bite twice in the same place." Probably our imperfect tuition in "mechanical dentistry" is responsible for the visitation we have undergone at the hands of those who have dubbed the art of "crowning" teeth a mystery. Proficiency in constructing metal cap and collar crowns should be extracted from every dental student before he is allowed to commence operating in the mouth. One or two demonstrations are sufficient, and practice can be cheaply obtained by the use of copper or nickel.

The Examining Board of the Royal College of Surgeons are to be congratulated on having added the subject of "Dental Mechanics" to the practical examination, and it is to be trusted that the tests will be searching. The provision that now comes into force enabling dental students to take chemistry, materia medica, and the whole three years' course of dental mechanics before registration will be sure to meet the approval of the schools.

DENTAL HOSPITAL OF IRELAND.

EXTRACT FROM LAST REPORT.

"During this, the tenth year of its existence, a very large number of the poor have received aid from this institution; and the professional staff have laboured under much difficulty in carrying out the treatment of these cases, owing to their increasing number, in the present premises. The poorer section of the public are becoming more alive to the advantages of having their teeth attended to in the earlier stages of disease, and are being gradually educated to avail themselves of proper treatment, and to retain their teeth, rather than to have them indiscriminately removed. This means, of course, a much greater tax on the professional services of the staff.

"Under these circumstances the latter have applied to the Committee of the Hospital to make an appeal to the public for funds to build suitable premises, with numerous well-lighted operating rooms, so that it may be possible to treat a larger number of cases simultaneously. They have inspected many private houses, and cannot find any really suitable for the purposes of a thoroughly efficient dental hospital. The Committee submit that as the services of the Staff are given without fee or reward, the charitable public should supplement them by building premises adapted in the best way to economise valuable time, and render this voluntary service available to the poor to the fullest possible extent.

"The amount of money required for building a thoroughly efficient dental hospital is about £3,000.

"In order to defray this expense the Committee have decided to organise a large Fancy Fair, to be held towards the close of the year. As the sphere of usefulness of the Hospital is not confined to Dublin, but extends throughout Ireland, the Committee hope to receive a general support from the country districts."

The following testimony demonstrating the usefulness of this Hospital has been given by nearly all the general hospitals in Dublin:—

The Dental Hospital in Ireland has for the past ten years discharged a useful and important function in the treatment of the suffering poor. We consider that it should be maintained in a high state of efficiency by the charitable public.

Signed by the Professional Staff of the

HOUSE OF INDUSTRY HOSPITALS.

MATER MISERICORDIÆ HOSPITAL.

DR. STEEVEN'S HOSPITAL.

ADELAIDE HOSPITAL.

CITY OF DUBLIN HOSPITAL.

MERCER'S HOSPITAL.

SIR PATRICK DUN'S HOSPITAL.

JERVIS STREET HOSPITAL.

MEATH HOSPITAL.

SUMMARY.

The Dental Hospital of Ireland was opened in 29, York Street, Dublin, in temporary premises, in the year 1879.

About 70,000 cases have been relieved during the decade of its existence. Owing to the general depression of the times it has

not been thought advisable to issue an earlier appeal than the present on behalf of this charity.

The present premises are quite unsuited for the purposes of a dental hospital. There never can be a proper dispensation of dental treatment to a large number of the suffering poor until suitable premises are built for this special purpose containing numerous properly lighted operating rooms.

The public are invited to reflect on the fact, that not only are the poor relieved, but also that gradually a well educated class of dentists is trained in such an institution.

There is not a county in Ireland which has not already felt the benefit of this hospital, in which patients from all parts of the country receive relief, either directly or from being sent on to it by the general hospitals.

It is surely the duty of the public to make available to the poor in the highest degree this organised philanthropic effort.

This means that a fund of about £3,000 should be raised for the purpose of rendering possible the change to suitable premises.

The public are reminded that if this fund is promptly raised the question of a permanent dental hospital will be practically solved, as the annual sum necessary to maintain a dental hospital is, compared with that required by other hospitals, very trifling, as neither beds, nor board, nor a large staff of officials are wanted.

To meet this demand on public charity, a peculiarly attractive

VENETIAN FETE AND FANCY FAIR

Will be held in the Leinster Hall, on 5th, 6th, 7th, and 8th February, 1890.

This movement has received large support. The guarantee fund towards preliminary expenses already exceeds £300.

This appeal is made, not only to the citizens of Dublin, but to the Irish public at large. It is hoped that contributions will be received from every county in Ireland.

Contributions in money to meet working expenses, in needle work, dolls, children's clothes, &c. ; wood carving, flowers, Irish industries, bric-a-brac, foreign curiosities and manufacture, furniture, china, pottery, works of art, painting, statuary, bronzes, game, country produce, &c., will be thankfully received.

EXTRACT FROM REPORT OF ART COMMITTEE.

"Venice in the seventeenth century was a great centre of commerce, arts and science, and people from all parts of the

world were daily to be seen in its great markets and warehouses. We have selected as the scene of the Fancy Fair Venice in the Seventeenth Century, about the time of one of the great naval victories of the Republic over the Turks. This will give us a wide scope for attractive decoration. We purpose painting in oils a number of pictures representing characteristic Venetian scenes in holiday attire. These pictures will extend along each side of the Leinster Hall, forming a background to the stalls ; and aided by beautiful garlands of artificial flowers, made by the hands of Irish women, in correct imitation of the flora of North Italy, and brilliantly interwoven with the electric light, will, we trust, prove an effective setting for our stall-holders."

PATRONS AND LADIES' COMMITTEE.

President.

Her Excellency the Marchioness of LONDONDERRY.

Patrons.

His Grace the Most Rev. Archbishop
PLUNKET.

His Grace the Most Rev. Archbishop
WALSH.

Patronesses and Ladies' Committee.

H.S.H. Princess Edward of SAXE
WEIMAR.

*The Duchess of ABERCORN.

The Duchess of LEINSTER.

The Marchioness of DUFFERIN and
AVA.

The Marchioness of ORMONDE.

The Countess of ABERDEEN.

The Countess of DUNRAVEN.

The Countess of ENNISKILLEN.

The Countess of GRANARD.

*The Viscountess GORMANSTON.

*Mrs. DRAKE, *Mrs. PALLES,

*Mrs. DALLAS PRATT, *Mrs.
CORBETT.

The Viscountess MASSEREENE.

The Lady CASTLETOWN.

The Lady MOWBRAY and STOUR-
TON.

The Lady O'NEILL.

The Lady ROSSMORE, *Mrs.
HALL.

*Lady STOKES, *Mrs. BEN- } (2)
NETT.

Lady CORRIGAN.

*Lady GRACE.

Lady GUINNESS.

Lady HODSON.

*Lady HUDSON KINAHAN and

*Mrs. GEORGE KINAHAN.

Lady MARTIN.

Lady MORRIS.

*Lady BALL, *Mrs. STUBBS, *Mrs.

CONOLLY NORMAN, *Mrs.

MACIVOR (Refreshment Stall).

Lady BALL GREENE.

Lady FERGUSON.

Lady MAXWELL.

Madame McDERMOT.

Madame O'CONOR.

*Mrs. MONROE and *Mrs. HOLMES.

Mrs. CARTON.

Mrs. E. DWYER GRAY.

Mrs. MOORE (Ashton).

Mrs. JOHN ROSS.

Miss HORT.

Mrs. BURLEIGH STUART.

*Mrs. MALCOLMSON.

*Mrs. GOULDING.

*Mrs. J. G. POLLOCK.

*Mrs. W. J. THACKER and *Mrs.

ARCHIBALD ROBINSON.

*Mrs. ROBERT HAZLETON.
 *Mrs. ROBERT H. MOORE.
 *Mrs. W. BOOTH PEARSALL.
 *Mrs. THEODORE STACK, *Mrs } (3)
 EDWARD BIRCH.

*Mrs. A. W. W. BAKER, *Miss
 SALMON, and the *Misses
 GRAY (2).
 *Mrs. DANIEL CORBETT, JUN.
 *Mrs. G. W. YEATES.
 *Mrs. G. M. P. MURRAY and *Mrs.
 ADAM FINDLATER.

* Names thus marked are stallholders. Names printed on the same line or in brackets indicate colleagues in the same stall. (2) Indicates a double, (3) a triple stall.

Art and Decorative Committee.

THOMAS DREW, R.H.A.
 S. CATTERSON SMITH, R.H.A.
 WALTER F. OSBORNE, F.H.A.
 THOMAS H. LONGFIELD, F.S.A.
 CHARLES RUSSELL.
 J. M. KAVANAGH.

W. B. PEARSALL, F.R.C.S.I.
 Mrs. W. J. MARTIN.
 CONOLLY NORMAN, M.D.
 C. E. FITZGERALD, M.D.
 G. W. YEATES, M.B.
 G. W. YEATES, M.B., Ch.M.

Dental Hospital of Ireland.—Dentists.

A. W. W. BAKER, M.D., F.R.C.S.I.
 DANIEL CORBETT, M.R.C.S.E.
 DANIEL CORBETT, jun., F.R.C.S.I.
 ROBERT HAZELTON, F.R.C.S.I.
 ROBERT MOORE, F.R.C.S.I.

G. M. P. MURRAY, F.R.C.S.I.
 W. BOOTH PEARSALL, F.R.C.S.I.
 R. THEODORE STACK, M.D.,
 F.R.C.S.I., *Hon. Sec.*
 G. W. YEATES, M.B., Ch.M.

REPORTS OF SOCIETIES AND OTHER MEETINGS.

Odontological Society of Great Britain.

THE ordinary monthly meeting of the above Society was held on December 2nd, at the rooms, 40, Leicester Square. Mr. HENRY SEWILL, M.R.C.S., L.D.S., President, in the chair. Present—a large attendance of members and some visitors.

Mr. John Charters Birch (of Leeds) was balloted for and elected a member of the Society.

Messrs. Robbins and C. D. Davis, were elected auditors for the year.

The LIBRARIAN (Mr. Ashley Gibbings) announced the addition to the Society's Library of Dr. George Johnson's "Essay on Asphyxia" and various periodicals.

Mr. E. LLOYD WILLIAMS communicated the particulars of an interesting orbital tumour, which had been originally diagnosed as sarcoma of the superior maxilla. The patient, a woman, was after the meeting exhibited for the members' inspection. The patient

had suffered agonising pain in the upper jaw on the right side extending from the bicuspid forwards and localised to the area supplied by the anterior division of the fifth nerve. She applied for relief of the intense neuralgia about a year subsequent to its first appearance. The patient was, after careful examination, referred to Mr. Bland Sutton. There was some exophthalmos and a diagnosis of orbital tumour was then made and the growth removed by operation. [Mr. Bland Sutton subsequently explained the further details of this case.] From the point of view of the dentist, Mr. Lloyd Williams thought several matters about the case were important. Firstly, it illustrated the importance of seeking for the cause of neuralgia not only in the teeth but centrally in the nerves and centres. It was common for dentists to blame medical men for neglecting to observe the dental origin of neuralgia ; it should not then be forgotten that dentists might be disposed to neglect the non-dental origin of neuralgia. Secondly, the ablated jaw had been very skilfully replaced by a mechanical substitute by a student at the Dental Hospital, and members would after the meeting be able to see how very efficiently the substitute acted. It should be noted how very useful was the hollow chamber in the vulcanite plate in cases like the present, in which there was an extensive loss of alveolar process. Mr. Lloyd Williams showed another case, that of a man aged thirty, who had contracted syphilis in April, 1887, and in August, 1888, had a perforation of the palate as the result of syphilitic periostitis. This case was remarkable in that the time between infection and perforation of the palate was unusually short, the patient having applied to the hospital for alleviation of his sufferings caused by the passage of tobacco smoke, food and liquids through the palate into the nasal cavities. The question was whether it would be better to assist nature and cover the perforation with an obturator, or whether by so doing the evil would be increased owing to injurious pressure exercised by the obturator upon the soft parts about the ulcer. A very carefully fitted obturator was made so as to cover in hole, but at the same time avoiding undue pressure upon the soft parts. It was interesting to note that while wearing this plate the perforation had, with the exception of a pin hole aperture, become closed by fibrous tissue.

MR. BLAND SUTTON then detailed the clinical history of Mr. Lloyd Williams' first case. The patient suffered terrible pain from neuralgia and had had several teeth removed in the hope of

alleviating her sufferings. When seen at the Middlesex Hospital the right eye was prominent and pushed somewhat out, and pressure upon the globe gave great pain. The soft parts were carefully tested for sensation with a pin, and it was found that all areas supplied by the infra-orbital nerve were anæsthetic. Without other evidence, the diagnosis of orbital tumour (? probably sarcoma) involving the infra-orbital nerve was arrived at and operation advised. Consultation with his colleagues decided Mr. Bland Sutton to remove the jaw. After performance of laryngotomy and plugging the larynx, the lip was divided and the cheek reflected; a lobulated tumour was found and removed with the upper jaw. Meckel's ganglion was exposed and also taken away. Upon dissection the tumour was seen to be a myxoma involving the infra-orbital nerve, the nerve fibres being expanded over the growth, which sprang from the intertubular fibrous tissue. The fifth nerve was peculiarly liable to the growth of neuromata, but the present was, he believed, unique in that it had invaded the orbit and antrum. The result of the operation had been most satisfactory, no recurrence or pain having appeared.

The PRESIDENT hoped that as several eminent authorities were present, a good discussion upon Mr. Williams' interesting cases would ensue.

Mr. STORER BENNETT remembered a case under the care of Mr. Henry Morris of a man aged seventy-three, who had had his teeth removed to relieve severe neuralgia, but without benefit. After palliative means having failed the infra-orbital nerve was cut down upon and numerous minute bodies found upon it. The nerve was pulled as far out of its canal as possible and ablated, giving the patient permanent relief.

In reply to a question from the PRESIDENT, Mr. SUTTON said he had removed the jaw rather than enucleated the tumour, because he did not think enucleation possible when he undertook the operation; he should, however, in future try enucleation before the severer procedure.

In a discussion upon Mr. Lloyd Williams' second case, the PRESIDENT expressed an opinion that syphilitic perforation of the palate should not be interfered with until all active ulceration of the soft parts had ceased, a view in which Mr. HUNT (of Yeovil) coincided.

Mr. NEWLAND-PEDLEY's experience at Guy's Hospital had led him to believe that an obturator, provided it did not enter

the aperture, acted as a natural splint and kept the soft parts from being irritated by food, &c., and this belief had induced him to apply obturators as a routine practice in all cases.

Mr. LLOYD WILLIAMS, in replying, said he concurred with Mr. Newland-Pedley in believing early application of a properly fitting obturator lessened ulceration and loss of tissue.

Mr. DAVID HEPBURN then described a slide section tray. Its object was to make plaster impression-taking easier and avoid "dragging" when a plastic modelling material was employed. It consisted of two portions, one resembling an ordinary impression tray, only with the anterior portion of its external rim absent. The second portion consisted of a slide to which is attached the "missing" portion of the external rim. The slide works upon the handle, and when pushed into place completes the tray. In applying this tray, say in a case of six front loose projecting teeth with narrow necks standing in the upper jaw, if modelling composition is used, the slide is removed and the tray filled with the plastic placed in the mouth. It is brought well up to the backs of the teeth and held until well hardened. A roll of soft composition is then placed on the exposed anterior surface of the teeth, the slide is applied and pressed home, and so the impression is completed. To remove the impression, the slide is withdrawn and the tray likewise, and they are again united outside the mouth ready for casting. In taking a plaster impression the first part of the procedure as detailed is pursued, only plaster is of course substituted for modelling composition. If the plaster curls round the anterior portions of the teeth, when hard enough it is pared off. In the second stage—obtaining the impression of the anterior surface of the teeth—modelling composition is again used as described above. This tray is applicable for cases of bar lower cases when the bicusps incline inwards or the incisors project, in cases of marked erosion, irregularity or cleft palate.

In discussing the "slide section tray" Mr. VAN DER PANT (Kingston) asked whether, in patients who had a long upper lip, it was not difficult to remove the front of the tray. He had treated the cases to which Mr. Hepburn had referred by removing the anterior portion of his tray and replacing stent, having oiled or vaselined it to prevent suction.

Mr. W. A. HUNT (Yeovil) believed if plaster were universally

used no special mechanism was required, and all undercuts could be successfully obtained.

Mr. HEPBURN, in replying, said the long upper lip was not a real difficulty, as the stent hardened so completely that in removing the anterior portion of the impression the lip gave and the stent passed over.

Mr. CUNNINGHAM (Cambridge) showed various dental implements and explained their uses, as well as demonstrating by models. Among these were examples of the Büttner crown, some specimens filled by Herbst rotation method and some Herbst instruments.

Mr. J. ACKERY read notes of a case of fracture of the superior maxillary bones which had been under the care of Mr. W. B. Paterson and himself at St. Bartholomew's Hospital. The patient—a lad of seventeen—was struck upon the left side of his face by a swing-boat and rendered unconscious. On admission into hospital crepitus was felt extending from the left molar region transversely across the face and over the nose. The left nasal bone protruded from a wound half-an-inch long over the bridge of the nose. Another wound—at the bottom of which was bare bone—extended for one and a-half inches transversely outwards from the left nostril. There was much displacement of the upper jaw, the left alveolar process and teeth being about half-an-inch lower than the right. The left jaw could be moved *en masse* downwards, laterally and to the right. The tongue was wounded and much swollen. Reduction under chloroform was effected after the use of considerable force and the lower jaw used as a splint, fair apposition being secured, although the articulation was not very exact. A four-tailed bandage was applied, but had to be loosened, from the difficulty the patient had in breathing when it was applied tightly. As sickness supervened no further treatment was upon that occasion attempted. The next day a piece of composition half-inch gas pipe was flattened and placed across the upper arch below the first molars and turned up and back, and secured by a bandage across the occiput. Impressions of the jaws were taken before this was applied, and after casting, a dental alloy plate was struck up, fitting over the palate and teeth in the upper jaw. A socket was then cut and soldered along the upper and outer edge of the plate on either side. A thick piece of iron wire was then flattened at the end and fitted to the socket on each side and brought round well in front of the angle of the

mouth, and the ends directed backwards, terminating in a hook in front of the ear. A bandage was made fast around the hook on either side and tied below the occiput, and another bandage passed under the bars on either side and secured on the top of the head. This, after being worn for three days, was replaced by a Gunning's splint, as it failed to keep the jaws in position, and caused soreness. Mr. Paterson removed the side wires of Mr. Ackery's splint, and a bite with wax was taken on the plate. A vulcanite box was added to the plate on either side for the lower bicuspid and molars to bite into, and lined with softened gutta-percha, and the splint arranged was fitted into the mouth, and the same method being pursued as when taking the bite, the lower teeth were brought to close into the boxes and fixed there by an external apparatus, which consisted of a padded chin-piece with side straps, which were attachable to a cap. This apparatus was worn for a month, when the fracture was united and the natural bite restored.

Mr. HERN pointed out that the line of fracture would open both antra and enquired whether any antral symptoms existed. The history of the case illustrated, he thought, the great disadvantage of any splint which projected out of the mouth. In a similar case under Mr. Hern's care at the Dental Hospital, a Kingsley's splint had failed on account of the arms getting in the way when the patient lay upon his pillow. Mr. Hern felt also the case pointed clearly to the value of the headcap instead of the bandage.

Mr. ACKERY, in reply, stated no antral symptoms had been observed.

The PRESIDENT then announced that the next meeting—the Annual General for the election of officers of the Society—would take place on January 13th, 1890, when he should deliver his valedictory address, the officers for the ensuing year would be elected and a paper by Dr. Scanes Spicer be read upon "Nasal Obstruction and Mouth Breathing as Factors in the Etiology of Disorders of the Teeth."

Odonto-Chirurgical Society of Scotland.

THE First General Meeting of the Session 1889-90 was held on the 14th November, Mr. JOHN A. BIGGS, L.D.S., President, in the chair.

At the conclusion of the formal business, the PRESIDENT proceeded with his inaugural address:—

GENTLEMEN,—After the remarks I made at our last annual meeting, when you did me the honour to confer upon me the office of President of this Society, I need hardly say that I feel proud of the position, and that I have great pleasure in being with you on this occasion in this distinguished capacity, but while thus frankly admitting to you so much, you will, I hope, bear with me while I also confess to you the misgivings I have of my own ability to fill the office creditably to myself and acceptably to you.

When I think of the roll of honourable and learned men who have filled the chair before me, you will own I have grave grounds for my fears. As you know, your choice fell first upon one whom, I am sure, we should all like to have seen filling this position, and who needs no praise from me to raise him in your estimation. He has never been sparing of either his time or money in the advancement of his profession in its ethical, practical, political, or its educational interests, and who, I am confident, would have held it with greater acceptance to us all.

You all know how ably Dr. Williamson has recently filled the Presidential chair, and how difficult it will be to beat the record of his attendance, notwithstanding the distance he had to travel in order to be present, and the able and unbiassed manner in which he took part in the discussions. But I do want credit for something, and that is courage to accept the office just vacated by so worthy a predecessor, and declined by so distinguished a man as Mr. Macgregor. And now that I am in office, I mean to do my best with my poor abilities to maintain the honour and usefulness of this Society, and in whatsoever I may be found wanting it will not, at least, be in interest in its affairs. How many societies are heralded into existence in the course of a year with a flourish of trumpets which never see the close of it; but this, the Odonto-Chirurgical Society, has not only survived a great number of years, but has been a power in Scottish dental affairs, having been one, if not the most important, means of banding the best dentists of the country together, and uniting them in a common cause. Before its existence there, was a far greater amount of selfishness, petty jealousies and prejudices rampant. Each man considered himself as good as another and a great deal better. If any important item of practical value came his way he endeavoured to conceal it from his professional brethren, and made what capital he could out of it for his own private interest. He might be a

man of a very sociable disposition to all around him, but not so to his fellow practitioner.

From the same sources as those from which our Society arose sprang the Edinburgh Dental Hospital, than which I know of no more flourishing institution in the city, nor any more deserving of the liberal support of the citizens, and, compared with the cost of its maintenance, I feel sure it has no equal in relieving pain and giving comfort to the poor. Within its walls there is a staff of about twenty-four doctors and dentists, working together gratuitously for the relief of common humanity, and their kindly smiles and hearts are not reserved for their patients alone, but are there to welcome and to aid each other.

Then, again, we are indebted in the main to members of the Odontological and Odonto-Chirurgical Society for the passing of the Dental Act, giving us registration and the extension of the degrees we now hold; and then arose the British Dental Association, with all its power for good among us. There are a great many upon the register still, who are, unfortunately, not a credit to the profession. The public cannot distinguish between such men as yet, but happily they soon will—not but what there are many good and trusty men who have yet no degree, but they are at liberty to declare their status by becoming members of the British Dental Association, and that will be a guide to the public in the near future.

While in Harrogate this year, a lady, knowing my profession, asked me, Is So-and-so a good dentist? I asked, has he a degree? She said no, but he is registered. I said, do you know if he is a member of the British Dental Association? She said, I do not know. I said, if he is, it is a voucher for his standing. If he be not a member, I cannot advise you further about him. The public is also fast finding out that men pretending to do dental work, and yet not daring to call themselves dentists, are not dentists at all, and are not to be trusted, and, no doubt, this is largely due to the publicity given to the transactions of the British Dental Association, and to the prosecutions under the Act. Now, gentlemen, if you have followed me, you will see I have been working up to a point in my address, and the point is, that we are largely indebted to this and kindred societies for the elevated platform on which we stand to-day, compared to that of thirty years ago. We must take upon ourselves the responsibilities of maintaining them in full vigour, and to do that, it behoves every member to

do his utmost to further its interests, and this may be done in so many ways that it is unnecessary to do more than briefly notice some of them. In the first place, an interest may be shown by the frequency of attendance, for that is the most essential of all, as it is most discouraging to those giving papers, showing specimens, and giving demonstrations to a limited audience. Then every member can, if he choose, give a paper on something or other which will afford food for reflection, and, no doubt, throw light upon his subject that will be useful to many, if not to us all. Some might be inclined to say that they are too busy to take anything like an active part in any society. My experience, however, is that only busy men ever do take an active part in these matters.

Then, again, many men declare they would readily give a paper, but that our literature is so prolific that it is out of their power to find a subject into which they could throw a sufficiency of originality to warrant them in delivering it. With that excuse I have some sympathy, as it has been my own experience. But where there is a will there also is a way.

Once I was asked to give a paper for a sister society, and declined on those grounds, but, being urged, I said give me a subject and I will do my best. A subject was proposed, I accepted, wrote and delivered it, and probably no one derived more benefit from the effort than myself. Now, if I may be allowed to suggest a few subjects for papers, I would first indicate anæsthetics, and that notwithstanding that we have had such able and instructive papers and discussions on the matter at Brighton last August. I am prepared to affirm that the subject is one than which no other can possibly be of greater interest, and my favourite mixture, of which I spoke last year—viz., nitrous oxide and chloroform, has not been included in the discussion, and, therefore, the subject has by no means been thrashed out. I would next suggest a paper on implantation as one likely to be interesting, and to lead to a lively discussion. Root-filling is also a good subject. Porcelain fillings might be repeated this year with advantage, and if some of our members would volunteer a demonstration on crown and bridge work, they might reckon with certainty on a large attendance of members.

Are micro-organisms the causes or effect of dental caries? would form a subject of interest for debate. What is the best

known treatment for sensitive dentine? But demonstrations are at all times the most popular, and secure the most successful meetings. Cases of irregularity under treatment, and after, are good subjects, but it is useless to suggest. You all have your pet hobbies, and this is the place to trot them out and give them an airing. If I have trespassed upon your time by my detailed suggestions, I trust you will attribute it to my desire to have as flourishing and profitable a session during my term of office as any which preceded it, and with that explanation I conclude, thanking you all for your patient and indulgent hearing.

A vote of thanks to Mr. Biggs was proposed by Mr. ANDREW WILSON, seconded by Mr. REES PRICE, and carried by acclamation.

Mr. WATSON brought before the Society an interesting case of motor and sensory paralysis after tooth extraction. The patient, a lady, had two teeth, the second lower bicuspid and first molar, extracted under the influence of nitrous oxide gas. On regaining consciousness she complained of a want of power and feeling in the lip of the side operated on. On examination it was found that a portion of the lip, about the size of a sixpence, in the neighbourhood of the mental foramen, was insensitve and somewhat powerless. The operation was performed last March, and at the present time, November, the part had not quite recovered itself. The accident was a somewhat uncommon one in connection with the removal of teeth so near the anterior portion of the jaw, and had been probably caused by stretching of the inferior dental nerve, which may have been adherent to or entangled in the roots of one or both of the extracted teeth.

Mr. CAMPBELL showed the model of a case of lupus of the soft and hard palates. The disease had removed all the palatal portion of the superior maxilla, the palatal bones, and most of the vomer and ethmoid. All that was left of the upper jaw was a portion of the alveolar process holding the six front teeth in position, the three molars on the right, and the last two molars on the left side. The roots of the molar teeth were very much denuded on the lingual side, but not at all on the buccal. The bicuspid were gone—in their place was a deep chasm.

Mr. Campbell supplied the defect with a hard vulcanite plate,

which answers the purpose very well, and improves the man's speech greatly.

He also showed a model of a case where he had removed an upper central incisor, beneath which was an unerupted canine, which he also extracted. The patient was above forty years of age.

The peculiarity of this latter tooth was in the fact that although beyond external influences, there was a cavity on the cutting edge. On examination the pulp was found to be in a very septic condition.

Mr. WATSON: In regard to Mr. Campbell's case of impacted canine with deep penetrating cavity at the apex of the cusp, having had an opportunity of examining it carefully, I conclude that there has been a deep fissure at this point, and that the relation of the tooth to the central incisor has caused the development of odonto-clast cells (some of which are still seen at the margins of the cavity in the canine), which have proved destructive to the faulty enamel, and eventually to the pulp, on the death of which the swelling and tenderness ensued. The case is very interesting and unique.

Mr. PAGE: During my extraction of a number of teeth for a powerfully-built German gentleman, on grasping the right superior wisdom, I felt the tooth and its bony surroundings loosen. I immediately desisted, and on the patient recovering from the nitrous oxide anæsthesia, I had the disagreeable duty of informing him one of his offending members had not been extracted. Though persistent in his appeals to get me to extract the tooth, I merely left well alone, only painting with a weak solution of aconite and iodine, and requesting his attendance in a day or two. Several visits were made, and each one found the patient more persistent in his wish to have the tooth extracted—it being slightly painful to the touch, and so somewhat interfering with pleasurable mastication. Otherwise, the parts appeared quite healthy, and the fracture, at the end of three weeks, felt tolerably firm. At this time, in deference to the wish of my patient, I reluctantly extracted the tooth, and, in doing so, brought away the tuberosity, and the floor of the antrum immediately above the tooth. At once the patient presented an alarming appearance of syncope, blood flowing from mouth and nostril, features livid, and breathing slow. Restoratives were at once successfully applied, and the bleeding controlled, firstly, with ice, and secondly,

with hot Fletcher's carbolised resin plugged into the wound. In an hour the patient left for home, with instructions to sleep in a sitting posture, and to apply ice should hæmorrhage occur. I anxiously awaited his return next day, and was pleased to hear no bleeding occurred, no fluid passed into the antrum, and altogether he had felt little inconvenience. Removing the greater part of the plug, a plaster impression was taken, and a black rubber case made, covering well the mucous membrane representing the tuberosity. Previous, however, to insertion the plug was removed, the cavity well washed with an antiseptic solution, and the wounded edges pared and brought together—not, however, in their entirety—an opening being left for drainage purposes. The wound was frequently washed with diluted carbolic acid, and the necessity of wearing the case impressed upon the patient. A week after the tooth extraction, on passing a barbless Donaldson's bristle into the wound, resistance was felt, and on wounding, a healthy-looking serous fluid, latterly tinged with blood, flowed from the cavity. Fluids then passed readily into the antrum. To-day—eleven days after the operation—on removing the denture, no fluid would pass readily into the antrum, and the wound had every appearance of health, and to the criticism of the subject I look for the prognosis of the case.

The fractured tuberosity embracing the roots of the wisdom tooth was exhibited. The cavity of the antrum had evidently passed further back into the substance of the maxilla than was usual, hollowing out the tuberosity to an extent which made its attachment to the body of the bone insecure, and liable to fracture on the application of any force.

Mr. MACGREGOR exhibited and presented to the museum the model of a lower jaw containing five incisors. Comment was made upon the comparative rarity of the specimen, but doubts were expressed as to whether it was actually as uncommon as it would appear to be, as if an extra incisor were to be erupted it would probably be removed almost at once, on the score of crowding, or it might even be extracted in mistake for a temporary tooth that had not been shed in due course.

Mr. CAMPBELL described the method he had adopted for making rubber bands for regulating purposes. He had been dissatisfied with those usually supplied for the purpose, as they so quickly lost their elasticity, due, he imagined, to the rubber from which they were made being adulterated. With different

sized punches, such as those used by workers in leather, he cut out rings from rubberdam, using larger or smaller rings, and thick or thin rubber, according to the case for which they were required. He found they retained their elasticity well, and were far more serviceable.

The PRESIDENT announced that the next meeting would be held on Thursday, December 12th, when Mr. Wilson had promised a paper on "The First Premolar in the Typical Dentition of the Placental Mammals."

The London Dental Hospital.

THE Annual Dinner of the staff, and past and present students of the Dental Hospital of London and School of Dental Surgery took place in the Venetian Chamber at the Holborn Restaurant on Saturday evening, Nov. 30th. Mr. CHRISTOPHER HEATH, F.R.C.S., presided, and was supported by a number of eminent members of the medical as well as the dental profession. Amongst those present were Dr. Julius Pollock, Mr. Mr. Pearce Gould, Dr. Stack, Dr. Dudley Buxton, Mr. Sibley, Dr. Walker, Mr. Woodhouse Brain, Mr. James Smith Turner, Mr. Henry Sewill, Dr. Hewett, Mr. Trimmer, Mr. Henry Morris, Mr. David Hepburn, Mr. Morton Smale, Mr. Henri Weiss, Mr. Bowman McCleod, Mr. A. S. Underwood, Mr. T. G. Hallett, Mr. J. R. Brownlie and Mr. A. O. McKellar. Covers were laid for about 150 and close upon that number sat down.

The repast over the usual loyal and patriotic toasts were duly honoured. These were proposed by the Chairman, and toasts of the Navy, Army and Reserve Forces were responded to by Mr. A. O. McKellar, the surgeon-in-chief to the Metropolitan Police Force.

The CHAIRMAN then gave the toast of "The Past and Present Students." Mr. Heath said: Gentlemen, I have now to propose what is really the toast of the evening. Now I must ask you to bear with me while I say a few words which may possibly make some of you blush, but still I think you may give me your attention for a short time whilst I introduce the toast of the Past and Present Students. In the first place, with regard to the students, I have been a student myself all my life; I am still a student, although a teacher; and I hold that unless a teacher continues a student the sooner he gives up teaching the better. I have no doubt, there-

fore, we shall all remain students, for unless we do so we shall make no progress. Now, I appeal to you to say whether the progress we have made in the past few years has not been in great part due to past and present students of the Dental Hospital. I am quite sure, when the history of dental surgery comes to be written, it will be shown the advancement we have made has been largely due to the great institution in Leicester Square. Then as we are all students, we ought all to keep to our studies. I know, speaking from the medical point of view, how difficult that is—how difficult it is for a busy man to find the time to keep up that knowledge of the progress of the day which is so desirable. Still, let me beg of you to try as far as you can to do so; because if you do not you will very soon find you are dropping behind. Again, one of the advantages of being students is, that it brings men together of similar tastes, and enables them to cultivate those tastes in an advantageous manner, both to themselves and others.

In connection with the toast I have to propose the healths of two gentlemen: one is Mr. Brownlie of Glasgow, who is a very distinguished practitioner, who holds the post of lecturer on dental surgery, of examiner on the Dental Board of the College of Physicians and Surgeons, Glasgow, and is surgeon to the Dental Hospital in Glasgow. We will call upon him if you please, to answer for the past and senior students.

For the present students I will call upon Mr. Hoffman, who I am informed is one of the most distinguished students of the Hospital, who is the best man of his year, and to whom was awarded the Saunders' Scholarship, which I believe is the highest honour open to any student of the Dental Hospital.

Mr. J. R. BROWNIE, replying for the past students, expressed the pleasure they all felt in coming to take part in the annual festival. They were glad to enlarge their acquaintance by meeting those students who had not yet passed under such agreeable conditions.

Mr. A. W. HOFFMAN followed on behalf of the present students.

Mr. J. S. TURNER proposed the "Dental Hospital of London and Staff." He said: What I have to propose to you to-night is one of those things that may almost go alone—it is the toast of the "Dental Hospital and Staff." I see on the record 13,000 cases of extraction for the last year; and there were also nearly 10,000 cases of extraction under *nitrous oxide gas*. The gas is a most beneficent institution, as you know, and it is greatly to

the credit of the gentlemen who administer it that they render their services to the hospital without remuneration. The Dental Hospital, I am happy to say, is tolerably well supported by the public—though not nearly so well as it deserves—whilst it is very well supported by our own and the medical profession. And in referring to those who have supported it in our own profession, I think it would be ungracious to omit the name of our great benefactor, Sir E. Saunders. With reference to the staff, I am sure gentlemen who know them will agree that it is quite unnecessary for me to say anything in their praise. We know their abilities as teachers, and their desire to forward the interest and welfare of the students. We all feel that if our profession is to be regenerated and is to attain that position amongst the learned professions to which it is entitled, it can only be through education, and to the hands of the staff of the Dental Hospital and to the lecturers is consigned the important duty of educating the dental student. I hope they will succeed in turning out thoroughly educated professional gentlemen, gentlemen who will be above singing their own praises or the praises of any particular school or system which they favour, or any mechanical practice which they carry out in the way of dental operation, and basing their reputation upon some mechanical trick, but will rather be good all-round dentists, so as to be able to supply the wants and relieve the necessities of their patients in every direction. I am happy to see that the College of Surgeons has rather increased its demands upon dental students. I do not think those demands will add very materially to their work, but I think they will add very materially to their efficiency as professional men. I will couple with this toast the name of Mr. R. H. Woodhouse, who has always been most zealous in his endeavours to promote the welfare of the hospital, as also of the students in the manner I have already indicated.

Mr. WOODHOUSE responded. He averred that the Dental Hospital of London had been the pioneer of all other similar institutions in the United Kingdom.

Mr. H. MORRIS proposed the "London School of Dental Surgery." If he were, he said, to sketch a typical lecturer, he should say that besides practical skill there should be scientific tendencies, rapidity of thought, facility of expression, geniality of character, and an interest in the welfare of those who were entrusted to his care. He was sure there were present those who would bear witness that all those qualities were embraced by the teaching

body of the school. The hospital had been a success, and the success of the hospital unquestionably depended upon the school.

Mr. MORTON SMALE (the Dean) responded. He said: It is with great pleasure that I once more thank you, in the name of the staff of lecturers of the Dental Hospital of London, for the very kind way you have received their health, and to assure you that it is a great pleasure to them to be able to render you that assistance which enables you to obtain your diploma and practise your calling. But, gentlemen, may I say a few words to you who have passed, are passing, or may pass through our schools. You are the salt of our profession, and we look to you duly educated gentlemen of our noble profession—for noble it is to relieve suffering such as we relieve—we look, I say, to you to savour our calling by honourable professional conduct. Quackery, charlatanism, and chicanery are rampant. There are those who, because of legal restrictions to protect the public from unprofessional pretenders, are unable to use the title of dentist, and who without any hospital training seek, by cunningly-worded advertisements, to entrap the unwary by styling their establishments Dental Institutes, Associations, Dentoriums, &c., but who if asked by their clients if they be dentists, would give an evasive answer, knowing as they do too well, that by using that title they render themselves liable to prosecution. There is another form of quackery to which I must allude—I mean those who, not content with the title of dentist, preface it with the word "American." I maintain there is no such thing as American dentistry. Dentistry is catholic and common to the civilised world, and the best men in all countries have no secret remedies or practices, but make all their processes public for the common good of humanity. One might as well talk of German surgery or French medicine. Be it surgery, medicine or dentistry, the same science and modes of practice are taught in all civilised countries. There have been, still are, and always I hope will be, dentists whose education has been received in America, some of whom we are too glad to welcome as colleagues and to see have seats upon the councils of our Societies. But on the other hand there are those, both here and abroad, who use this prefix; and the quack, ever ready and anxious to catch and entrap the careless and the thoughtless public, has taken advantage of this fact to use this same word "American," and has even gone so far as to purchase a bogus American diploma for a few

pounds. I ask you gentlemen to so temper your bearing in your profession as to shew by your conduct how much you disagree with all unprofessional behaviour, to avoid even the semblance of advertising, which is too common in a kindred profession—of writing testimonials for drugs, drinking waters, &c., and which the firm to which it is given advertises—to be content with the advertising that comes from downright honest thoroughness in your work ; content with the knowledge that if your income should be smaller you will have the satisfaction, which is far above reward, of having spent an honourable professional life and served your profession as upright gentlemen.

“The Visitors” proposed by Mr. A. S. UNDERWOOD, and responded to by Mr. E. TRIMMER, was the next toast.

Dr. DUDLEY BUXTON asked the company to drink the health of the Chairman.

The CHAIRMAN in the course of his reply mentioned that his grandfather, father, and three of his uncles had been dentists, and it was the merest accident he was not one himself.

During the evening a selection of vocal and instrumental music was performed by the members of the musical society of the Dental Hospital, assisted by Mr. H. L. Fulkerson, the conductor being Mr. Percy Jackman.

The health of the musicians was proposed by the CHAIRMAN and acknowledged by Mr. DAVID HEPBURN, and this brought the proceedings to a close.

National Dental Hospital and College.

THE customary Annual Dinner of the past and present students of the National Dental Hospital took place at the Holborn Restaurant on Friday, November 8th, and the opportunity was taken advantage of, in consequence of Mr. Henry Morris kindly accepting the responsibilities of the chair, of presenting the prizes to the successful students of the year.

Among those present were Dr. B. W. Richardson, Dr. Allchin, Mr. Black, Mr. M. Shield, Dr. Dudley Buxton, Mr. Felix Weiss, Mr. Morton Smale, together with the members of the staff of the Hospital and College, numbering over a hundred.

After the toast of the Queen the Dean introduced the Prizemen, who received their rewards from the chairman with many complimentary allusions to the value of their work.

HONORS LIST.—Dental Anatomy, R. S. Faro, J. N. Dunlop ; Dental Surgery, 1888, F. T. Haycroft, 1889, J. N. Dunlop ; Dental Mechanics, S. Keele ; Metallurgy, A. Moore ; The Rymer Gold Medal, J. N. Dunlop. CERTIFICATES.—Dental Anatomy, E. A. H. Field ; Dental Surgery, 1888, W. Rushton, F. T. Haycroft ; 1889, F. E. Cutts, A. Moore ; 1887, R. S. Faro ; Dental Mechanics, J. N. Dunlop, Arnold Prager ; Metallurgy, F. E. Cutts ; Dental Materia Medica, F. T. Haycroft, S. Keele ; Elements of Histology, G. M. Keevil ; Mechanical Work, J. N. Dunlop ; Students' Society Prize, R. S. Faro.

Prosperity to the National Dental Hospital and College was next proposed by the CHAIRMAN, who, in the course of his remarks, said : " The success of the Institution which in times past has been enjoyed and is being enjoyed at the present time, is, we are quite sure, well deserved and its continuance in the future we feel certain is perfectly secure. The National Dental Hospital cannot boast of any venerable age, and not even of mature manhood, nor can it boast of any large and magnificent structure which it calls its home, but it can glory in a youthful and vigorous early manhood, and in a life of twenty-five years' laborious usefulness, by the fact that the number of cases within the last ten years has more than doubled itself. The executive have been endeavouring to obtain new buildings, and have so far succeeded that three-fourths of the whole amount required for their erection has been secured, and were it not that the present tenant of the site offered to them holds a tenacious grip on the fag end of the lease, those buildings would by now have been nearly completed. With regard to the National Dental College the success of the recent examinations fully bear out the claim of the excellence of the teaching, and the care that is individually bestowed on each student. It is true that the National Dental College and the London School of Dental Surgery are running in a spirit of friendly rivalry and honorable competition, and I am sure not at all in a spirit of narrowness and jealousy. There is undoubtedly a field for both, and I believe that each will be made more efficient and rendered more serviceable by emulation.

The toast was responded to by Mr. CHAS. W. GLASSINGTON and Dr. GEO. CUNNINGHAM, the former remarking that many changes were still needed before the staff could feel certain that from the beginning to the end of the students' career a systematic course had been followed ; and the latter, from his experience of the Continental

refused to pay, he was summoned at the Bloomsbury County Court. The case was heard on December 16th, and Mr. Leeson was called as a witness, describing himself as the medical officer of the Battery Company. The case was determined in Mr. Wilson's favour, and the plaintiffs had to pay the costs.

Mr. FURBER said he would admit that Mr. Leeson was the medical officer of the Medical Battery Company.

Mr. MARTIN said that a copy of Mr. Wilson's declaration was sent to Mr. Leeson, and in reply he wrote a letter in which he submitted that the Medical Act did not apply to his case. He also said this was not a *bonâ-fide* case because the events took place more than two years ago. As a matter of fact, he was in no way responsible for the claim made against Mr. Wilson. The Royal College of Physicians had considered the case, and had resolved that a Licentiate might be a member of a trading company. The Medical Battery Company was established about ten years ago by Mr. Harness for the purpose of providing treatment of diseases by means of galvanic and electric appliances. Mr. Leeson was selected from a large number of applicants, as the head physician of the massage department, and was to be paid by salary. He had made electric therapeutics a special study. At the present time the chief consulting physician to the company was the illustrious Dr. Vigoroux, while the demonstrator was M. Loreau. Those names showed that everything done by the company was carried on in a thoroughly scientific manner, and they were now opening a post-graduate school for the instruction of the English faculty in electro science. Mr. Harness held degrees which he did not use. He was now simply the president of the company, which was a great and useful power in the medical world. Of course there was a prejudice against it because it advertised electropathic belts, but they were doing everything they possibly could to develop their science for the cure and relief of disease. Mr. Harness had also filed a statutory declaration, in which he stated that the claim on Mr. Wilson for two guineas as "physician's fees" was made out in error by the clerk; it should have been for electrical treatment. Mr. Martin then proceeded to put in several advertisements, which set forth the nature of the diseases for which the electrical treatment was applicable. Among other pamphlets, he produced one entitled "Electrisation as the Remedy for the Diseases of Women," at the end of which was a "private advice form," to be

torn out and filled up by anyone who wished to consult Mr. Harness.

Mr. FURBER said that some of the books put in had been withdrawn from circulation for the last eighteen months, and it was therefore manifestly unfair to bring them against Mr. Leeson.

Mr. MARTIN said they had been issued and circulated during the period in which Mr. Leeson had been connected with the establishment. One of the advertisements referred to Dr. Steavenson as approving of the electric treatment and putting within quotation marks certain words to that effect, which would lead readers to infer that they had been used by that gentleman.

Sir DYCE DUCKWORTH said that Dr. Steavenson had been exceedingly annoyed at this use of his name, and had published a disclaimer in the *Lancet*.

Mr. LEESON then offered himself for cross-examination by Mr. Martin. He said he was not responsible for the claim against Mr. Wilson. He, however, attended personally at the Bloomsbury County Court, though at the time he did not know that the claim was for physician's fees. Until a few days ago, when he wrote the letter, he had given no explanation of the circumstances under which the claim was put forward. Mr. Harness was an "M.D." of Philadelphia, and the diploma was hung up in the establishment.

Dr. GLOVER : Do you know that the University of Philadelphia does not exist?—No.

In answer to Mr. Muir Mackenzie, Mr. LEESON said he got his fee of two guineas for giving evidence at the County Court, and then left. Mr. Wilson produced the advertisement stating that consultation was free, and that finished the case, the judge saying, "It is no use going on." His connection with the company was that he was their physician, and was paid by salary. He was not a member of the company. Applicants first saw Mr. Harness, and arranged about the fees. He himself had a consulting room.

In answer to Dr. Quain, Mr. LEESON said Mr. Harness did not "practise"; he gave electrical treatment.

Dr. GLOVER asked if patients were led to understand that ruptures could be cured by electricity.

Mr. LEESON said they had cured several; others they had not cured. They did not pretend to cure all. Electrical trusses were supplied.

In reply to Mr. Furber, Mr. LEESON said that when a patient sent a diagnosis of his case it was forwarded to Dr. Vigoroux, who then communicated with Mr. Harness.

Dr. QUAIN : Is Dr. Vigoroux qualified ?

Mr. LEESON : In France, but not in England.

Dr. QUAIN : Then he is not a "qualified man."

The standing orders were suspended, and the inquiry continued considerably after the usual time ; and then, on the suggestion of Mr. Furber, who stated that he wished to call Mr. Harness in consequence of the statements that had been made concerning him, the further consideration of the charge was adjourned.

On the following day, after some other business, the Council proceeded to the further consideration of the case of Joseph Frederick Leeson. Mr. Harness, of the Medical Battery Company, presented himself for cross-examination, and, interrogated by Mr. Martin, stated that the action brought against Mr. Wilson in the County Court was a mistake. He knew nothing of it till some weeks afterwards. He had written a letter to a medical journal with regard to a paragraph that had appeared in it commenting on his business, and threatened an action unless an apology was offered. There was no apology, but he had taken no proceedings, because he thought it was a very small matter. The statement made was a gross lie. Mr. Wilson's account of the twenty-five guineas was an absolute falsehood. Mr. Leeson had only been two days in charge.

In re-examination by Mr. Furber, he said Mr. Leeson had nothing to do with any of the advertisements or pamphlets issued by the Battery Company. Mr. Leeson was a salaried officer of the company, and his duty was to see whether applicants were fit subjects for electrical treatment. He had nothing to do with the control or works of the business.

Mr. FURBER : Does he act as cover for you in any way ?

Mr. HARNESS : No, I require none. I have never held myself out as a qualified medical man, and have never made any charge for fees as a medical man.

In reply to Mr. Muir Mackenzie, he said he certainly suggested to people who were suffering from various diseases that they should apply to him for advice and treatment on electrical matters.

Dr. QUAIN : Should you treat a patient for disease yourself ?

Mr. HARNESS : If I felt disposed I should, by electricity.

In reply to other members of the Council, he said he had never written a prescription or advised that medicine should be taken. He possessed several diplomas, but dispensed with them. He did not practise as a medical man. He objected to state what his diploma was, as it had nothing to do with the case. He could answer the question satisfactorily if he chose, but he was not called upon to do so. He understood the suggestion was that he acted as a medical man, but he repudiated any degrees obtained in America or elsewhere, because it would interfere with his reputation. Mr. Leeson's special duty was to see that everything was done in strict medical order. If a patient came to the company, he would be referred to Mr. Leeson to see if he was a fit and proper subject for battery treatment. They had on record cases which were decidedly not fit for such treatment. He did not mean that they had refused to sell batteries—that belonged to another department.

Mr. FURBER, in summing up the defence, said Mr. Leeson had been connected with the medical profession for thirty-five years. For twenty years he had the largest practice in Bradford, which he gave up on account of failing health. He then went to Ilkley, and was at the hydropathic establishment there for ten years. He became connected with the Battery Company in 1887. His connection with that company was perfectly honourable and straightforward, and whatever the opinion of the Council might be as to the Medical Battery Company and Mr. Harness, that was hardly a question before them now. If Mr. Harness had committed himself by acting as a qualified person, being unqualified, the proper course to be adopted would have been that a summons should have been taken out before a magistrate under the fortieth section. The twenty-ninth section, under which the present proceedings were instituted, was one of the most penal clauses of the whole statute, and before acting upon it the Council ought to have the most unqualified evidence to support the contention that Mr. Leeson was acting as cover for Mr. Harness.

Mr. MARTIN, in replying, called attention to the fact that Mr. Leeson was present at the County Court as the principal witness in the action, that he heard the claim that was made, and had offered no repudiation or explanation. As to whether Mr. Harness had laid himself out as a duly qualified person, he would only refer to the publication of the company of which he claimed to be the president, and it was for the Council to draw its own inference.

The Council then deliberated on the case in private.

On the re-admission of the public,

The PRESIDENT (addressing Mr. Leeson) said: I have to inform you publicly that the Council, after long deliberation, has come to the conclusion (1) that you have committed the offence charged against you; (2) that the offence is, in the opinion of the Council, "infamous conduct in a professional respect;" and (3) that the Registrar has been directed to erase your name from the Medical Register.

The Pathological Effects of Chloroform Inhalation.

THE question, especially interesting at this juncture, whether the inhalation of chloroform produces any remote effects upon the organism, is most thoroughly studied by Dr. Robert Ostertag in a paper based on researches carried on in the Berlin Pathological Institute (Virchow's *Archiv.*, cxviii., 2). The subject is introduced with the remark that it is doubtful if chloroform would have gained so ready an acceptance in medicine as it did had the knowledge of its fatal action upon animals been known at the time of its introduction. Fröhner stated that cats are highly susceptible to it, dying from respiratory paralysis; and that rabbits are even more susceptible than cats. There was, to be sure, some opposition to its use on the ground of its dangers, but it was pointed out that sudden deaths during operations were not unknown in pre-chloroform periods. Moreover, experience has shown how variable are the risks run by this anæsthetic, and figures are quoted in illustration. Thus Samson places the chloroform mortality at 1 in 14,000, and Richardson at 1 in 3,500. According to Kappeler, Billroth had 12,500 cases before his first fatality, Koenig 7,000 without a death, Kappeler himself 5,000 cases and one death. Bardeleben from 1849 to 1875 had 30,000 cases without one fatality, but in 1876 he lost four patients from chloroform. The dangers of chloroform are not, however, limited to deaths during inhalation. Caspar pointed out that there is a "chronic chloroform poisoning," and gives a case of amputation of the thigh in which the patient died nine days after with cerebral symptoms attributed to the chloroform. Von Langenbeck lost a case seventeen hours after excision of the scapula, the symptoms being loss of consciousness, vomiting, and collapse,

these being seemingly attributable to the chloroform, and Berend mentions cases fatal at from three-quarters of an hour to sixty hours after operation. Experiments on the effects of chloroformisation made by Ungar and confirmed by Strassmann, showed fatty changes in many organs (including the heart) without, however, appreciable change in the blood. The author's own experiments were of wide range. They consisted for the most part in the daily repetition for several days of chloroform narcosis for an hour or so in various animals, as rabbits, guinea-pigs, rats, pigeons, cats, and dogs; and the general result was to show the production of widespread fatty degeneration, sometimes jaundice, and other evidence of blood destruction. The application of these results to the human subject is, however, difficult. In some cases, to be sure, icterus has followed prolonged chloroformisation; and in many fatal cases fatty degeneration of the heart has been found, obviously, however (in the acute cases), pre-existent to the narcosis; still, in cases dying some time after the administration of chloroform, such degeneration may have been due to this agent. Again, so many other factors connected with operations—shock, sepsis, &c.,—may operate in producing a fatal result, that it is often impossible to attribute this to the chloroformisation. That many individuals tolerate it well is shown by records of prolonged and repeated chloroformisation as a means of treatment, e.g., in tetanus, chorea, &c., without any subsequent ill-effects. Nevertheless, the results of animal experimentation are sufficient to justify the non-employment of chloroform anæsthesia in long operations. At the close of his lengthy paper Dr. Ostertag sums up his conclusions as follows:—1. That after long-continued inhalation of chloroform by different animals there may arise fatty degeneration of organs, especially fatty infiltration of the liver, fatty metamorphosis of the cardiac and skeletal muscles, kidneys, and stomach. 2. These fatty changes result from the action of chloroform upon the blood (destruction of red corpuscles) and upon the tissue cells. 3. Some individuals have a greater susceptibility to this action of chloroform than others, and succumb at an earlier period to its effects. 4. The fatal effect is due to cardiac paralysis which may occasionally be accompanied by but slight anatomical lesion of the myocardium, and also to gradual carbonisation of the blood.—*The Lancet*.

The Hyderabad Chloroform Commission.

WE learn by telegram from Dr. Lauder Brunton, who, as our readers are aware, proceeded to Hyderabad on Oct. 4th on behalf of *The Lancet*, and in consequence of an invitation extended to us by the Nizam, for the purpose of repeating and amplifying the experiments made by the Hyderabad Chloroform Commission in 1888, with a view to confirm or correct its conclusions, that the work is progressing in an entirely satisfactory manner, and the facilities placed at Dr. Brunton's command are unrivalled; 275 experiments on dogs and monkeys have already been completed, and the result so far has been to practically confirm the conclusions arrived at last year by the Hyderabad Commission. The telegram adds that the Nizam's Government is acting in a most liberal manner, and, in conclusion, states that the Nizam and the British Resident paid a visit to the laboratory on Monday last and inspected the work.—*The Lancet*.

A New Beef-Tea.

DR. C. M. JESSOP, in a paper read at the annual meeting of the British Medical Association, stated the results of his study on the physiological value of beef-tea as a diet for the sick. Basing his opinion on chemical analysis he condemns all of the ordinary home-made beef-teas and shop extracts. All of these are deficient in nitrogenous substance, which is indispensable, as it develops and renovates the tissues and produces force. Every substance in the body in which any form of force is manifested is nitrogenous. Nitrogenous substances composing the textures of the body determine the absorption of oxygen. The absorption of oxygen does not determine the changes in the tissues, but changes in the tissues determine the absorption of oxygen. In other words without the participation of nitrogenous bodies no oxidation and no manifestation of force is possible.

The absence of nitrogenous matter is very serious and "the best beef-tea that can be made" is inadequate for nutrient purposes.

To obtain a beef-tea that shall be nutritious, and easy of assimilation, it is necessary that the whole substance of the beef be finely divided and suspended in water. The process is as follows

for two quarts: Take one-half pound of meat, well chopped and place it in a digester with two quarts of water. Boil three hours, stirring frequently and triturating the meat with a wooden masher. At the end of this time the fibre is cooked; it should then be passed through a colander to ensure evenness of size and that no fibres adhere. If the process is properly managed there will be no remainder. The resulting beef-tea is rich in albumen and may be fully relied upon.—*The Therapeutic Analyst*.

ANNOTATIONS.

WE are authorised to state, with reference to the new regulations of the Royal College of Surgeons of England, that any students who have already commenced their professional studies will be allowed to take advantage of any change in the regulations that may be advantageous to them, but none of the requirements for additional study are made retrospective. Under these circumstances anyone now studying will be exempt from the second course of anatomy, and can take his chemistry, &c., privately, and can, moreover, claim exemption from a part or parts of the examinations, but he will not be required to do the practical physiology or the extra dissections. These questions having been raised we thought it advisable to state exactly what the practice of the College is in such cases.

THE withdrawal of Mr. Waite, of Liverpool, from the secretaryship of the Midland Branch, is a very important event to our Association and to the branch, and one which all of us will equally regret, the more so when we reflect that the cause of the resignation is failing health. Mr. Waite was throughout his career as secretary one of the most active and one of the ablest members of the Association, and when a few years back the affliction of failing sight compelled him to relinquish the active practice of his profession he showed no sign of flagging in his devotion to the interests of the British Dental Association, nor can we believe that this devotion will ever lessen, but health imperatively demands that the arduous and harassing secretarial duties should be laid

aside. Mr. Waite leaves behind him the memory of a strong man who has fought hard for his own ideals. His place will be filled by a very capable successor, Mr. J. Renshaw, of Birmingham.

AN interesting event took place at the Dental Hospital of London at the close of the Students' Society meeting on December 9th, when Mr. Hern, the president, was presented with a handsome silver salver and an illuminated book containing the signatures of the donors. Mr. Robert Woodhouse took the chair. After expressing the pleasure it was to him to officiate, he explained that those present and many others desired to make the occurrence of Mr. Hern's wedding, during his second year of office, the occasion for showing how much they valued the services he had rendered the Society and Hospital. Mr. Porter, in a few eloquent words, then begged Mr. Hern's acceptance of the gift, saying, "We hope it may serve, from time to time, to recall to your memory the days when you were our president, and may stand as a mark of our appreciation of the energies you devoted and the time you gave up for our good and for our benefit, both as teacher and president." After many words of thanks from Mr. Hern, and a hearty vote of thanks to the chairman, the meeting separated.

WE take the following from the *Melbourne Argus* of October 12, 1889 :—

DENTAL ASSOCIATION OF VICTORIA.—The first meeting of the council of the Dental Association of Victoria was held on Wednesday evening, Dr. Springthorp in the chair. There were also present—Messrs. Iliffe, Clarke, Carter, Thomson, M'Intyre, Reeve, Potts, Stevens, George, Kernot and Ernest Joske. The office-bearers of the association were appointed as follows :—Dr. Springthorp, president ; Mr. John Iliffe, vice-president ; Mr. Alfred Reeve, hon. treasurer ; Mr. George Thomson, hon. secretary ; and Mr. Ernest Joske, secretary. Eight additional gentlemen were nominated as members of the Association. Mr. Potts mentioned that the first dental association south of the line had been recently established in New Zealand, and it was decided to send a letter of congratulation to the sister association. A committee was appointed to draw up the articles of association, and the council adjourned till Thursday evening, the 31st inst.

ON another page we print the report of the Annual Meeting of the Odonto-Chirurgical Society. The report is as usual full of interest, for our Scotch friends have a certain love of thoroughness and exactitude that commands every one's attention and the reports of their meetings are always replete with valuable and practical suggestions. The leading feature in this meeting is the inaugural address of Mr. Austin Biggs, and a capital address it was, straightforward and to the point, suggestive to younger workers in the field of science and full of the right spirit with regard to the Association. We have no fear that the best traditions of dental surgery will suffer under the presidency of Mr. Biggs.

THE second ordinary meeting of the Odonto-Chirurgical Society (Session 1889-90) was held in the Rooms, 5, Lauriston Lane, Edinburgh, on Thursday, 12th December, at 8 p.m.; John A. Biggs, Esq., L.D.S., President, in the chair. *General Business*:—Paper by Mr. Andrew Wilson, L.D.S., "The First Premolar in the Typical Dentition of the Placental Mammals." *Casual Communications*:—By Dr. Booth Pearsall; by Mr. P. S. Walker, "On a Safety or Melioration Cap for existing form of Exhalation Valve on Face-piece ('gas');" by Mr. W. Bowman Macleod, "A Curious Case of Cleft Palate;" by Mr. J. Graham Munro, "A New and Ingenious Binder for Lathe Bands;" by Mr. H. H. Edwards (Madrid), "The Missing Incisors in Man."

ONCE more Dublin is astir. This time it is a fancy fair in aid of the funds for finding a new home for the Dental Hospital. The scheme is being backed in all quarters by the benevolent of all shades of opinion. Archbishop Plunkett and Archbishop Walsh are both patrons and the Duchess of Abercorn will take a stall. One of the features of the fair is to be a raffle for some beautiful old silver for which everyone should take tickets. We enclose a programme with this number. The fair is sure to be a brilliant success and the money return for the good work ought to be correspondingly large.

EDINBURGH DENTAL STUDENTS' SOCIETY.—The second ordinary meeting of the above society was held on Monday, 2nd December, at eight p.m.; Mr. J. S. Munro in the chair. Sixteen gentlemen were admitted as members. Mr. J. W. Watson read a

paper on the "Bacteriology of the Mouth." He described the general characteristics of the different varieties of bacteria, naming the temperatures and other conditions which are conducive to their development. He demonstrated the methods for the cultivation of the various micro-organisms. With the aid of a lantern he illustrated specimens. In conclusion, he appealed strongly to the members to observe strictly antiseptic precautions in their operations, giving as he did so a high place to hydronaphthol as the most powerful antiseptic agent we possess. In the discussion which followed the unanimous desire of the members was that Mr. Watson should take up a class of practical bacteriology. The Secretary was then called upon to read Mr. A. E. Donagan's paper on "Irregularities of the Teeth." This paper evoked a good deal of discussion, many members taking adverse views.

THE following curious letter occurs in the *Lancet* for November 30th:—

REVIVAL OF AN OLD REMEDY FOR TOOTHACHE.

To the Editor of the *Lancet*.

SIRS,—In the *Lancet* for the 16th inst. I find it stated that a Russian practitioner recommends the use of hyoscyamus seeds for toothache. "His plan is to burn the seeds, and to convey the smoke through a little paper tube to the hole in the tooth." The method described was a favourite practice of Andrew Borde of Pevensey, in Sussex, who in 1542 obtained the M.D. degree at Montpellier in France, and afterwards at Oxford University. It is described in his "Breviarie of Health," published in London in 1547, and is included in the list of anæsthetics in my book, "Anæsthetics, Ancient and Modern." Borde was first physician to Henry VIII. He published seven books, one of which he dedicated "to the Lady Mary," daughter of Henry VIII. He ultimately lost favour at Court, and died in the Fleet Prison in the year 1549.

I am, Sir, yours truly,
GEORGE FOY.

Dublin, November, 1889.

FALSE TEETH AND NEURALGIA.—Mr. N. Stevenson writes to the journal of the British Medical Association:—"I have recently had to treat several very severe cases of facial neuralgia, which would have been cured years ago if they had been sent to a dentist. I believe there are many people suffering from diseased teeth, or are dyspeptic from inability to masticate their food properly, who never receive any suggestion from their doctor about

the state of their mouth ; on the other hand, some physicians always insist that the teeth shall be put right before any other treatment is followed. The present fashionable mode of immovably fixing false teeth into roots and naturally healthy teeth, is responsible for an increase of neuralgia, and should, I think, be discouraged in every way. It is surely unscientific in principle, and must in the result end in disappointment or more serious evil. All false teeth (except those fastened singly into healthy roots), ought to be easily and frequently removed for cleansing, and should never be allowed to damage the natural teeth."

LECTURE ON TEETH AND THEIR MANAGEMENT.—A few days ago, Mr. George Cunningham, of Cambridge, delivered a lecture at the Working Men's College on the subject of "Teeth." Mr. A. G. Ashton was in the chair. In the course of his remarks the lecturer showed the importance of the teeth being in good condition for the general functions of the body. He also removed the popular error that babies have no roots to their teeth. If a person has bad teeth he cannot masticate ; if he does not masticate properly there can be no proper assimilation of food ; if there be no assimilation there is no nutrition ; no nutrition brings poor health ; and with bad health what is life ? He also showed the manner in which teeth were built up. The lecture was illustrated with a magic lantern, and at the close a hearty vote of thanks was accorded.

A WOMAN was remanded the other day for attempting to obtain money under false pretences from a dentist. She requested him to make some teeth, the fee for which was to be ten guineas, and then tried to borrow five shillings from him. There are few old practitioners who cannot call to mind a good many cases of this sort, in fact it is not easy to avoid sometimes falling into the trap if cleverly laid. We remember one of the leaders of our profession in its commencing struggles, who after an operation mentioned the amount of his fee, the lady smilingly felt for her purse, and to her horror it was gone—stolen, of course. Our *confrère* was the most courteous of men ; beauty in distress never failed to move him ; his purse was instantly at the service of the unhappy fair one, who was at last reluctantly persuaded to accept a loan of a sovereign. The native modesty of the patient prevented her from ever returning to discharge either debt !

A CONTEMPORARY, *Iron*, publishes the following statement, under the head of "Electricity":—

AN ELECTRICAL TOOTH EXTRACTOR.—An electrical instrument has been invented which is designed to remove the pain incidental to the extraction of teeth. It consists of adjustable prongs carrying buttons and connected with an electrical battery. The buttons are placed on the face over the nerves leading from the teeth to the brain, and a circuit is established the moment the extracting instrument touches the tooth to be removed.

The idea is not a new one. Some thirty years ago the same experiment was attempted and a good many practitioners investigated it; the result was not sufficiently satisfactory and nothing more was heard of the matter until the revival which forms the subject of the present note.

SHEPHERD'S PURSE AS A HÆMOSTATIC.—Dr. K. E. Wagner publishes in the *Vratch* (reports the *Lancet*), some observations which tend to show that shepherd's purse (*capsellæ bursæ pastoris*) when made into a tincture has very considerable hæmostatic properties. The cases were of different kinds, two of them being of uterine hæmorrhage, two of hæmoptysis, and one of epistaxis. In all these a marked effect was produced, the hæmorrhage being either entirely arrested, or at least, very greatly diminished. No unpleasant effects, such as headache or dyspnœa, were observed even when three tablespoonfuls of the tincture were taken in the course of twenty-four hours, the usual dose being from one to two tablespoonfuls.—*Notes on New Remedies*.

THE prospectus of a new boys' school in Derbyshire has been recently brought to our notice on account of a regulation which is so excellent that we transcribe it here for the benefit of our readers. "It is expected that every boy should have his teeth examined by his own dentist during the holidays and return to school with them in sound condition, as this obviates all health derangement from that source." The rest of the prospectus shows a very wise regard for health and in many respects the school will compare favourably with some existing institutions. It is called the New School and is situated at Abbotsholme on the Dove, Derbyshire.

HOW TO CLEAN HYPODERMIC SYRINGES.—Syringes, whose canula have become obstructed so that a fine wire cannot be drawn through, are cleaned by holding them for a moment over

a flame; the foreign substance is thus quickly destroyed and driven off. If a wire had been rusted into the needle, it should be dipped in oil before holding over the flame. To remove the rust from the interior of the canula, it is well to pass oil through the canula, then heating it; then rinse it out with alcohol. The needle is then ready for use.—*Deutsch Med. Wochenschr.*, 1889.

WE have received an anonymous letter signed "L.D.S.Eng.," enclosing some advertisements of certain dental quacks in a Midland town. We beg to say that however valuable a communication may be, we cannot make the use of it we would wish unless it be authenticated. In the meantime we can only remind our correspondent that all the learned professions are exposed to the malpractices of similar parasites, and that it is mainly by the education of the public, which is one of the objects of the Association, that an efficient redress can be obtained.

WE have received from Messrs. Burroughes and Wellcome a pamphlet upon the subject of "Adolescence and its Troubles," that is very carefully written and of great interest from the pen of Mr. Fellows, of hypophosphite celebrity. The question of dental troubles incidental to puberty is touched upon, and the amenability of local disturbances to constitutional treatment is well brought out. Careful regulation of diet might avert some outbreaks of caries altogether.

THE case of Leeson and Harness, which was considered by the Medical Council, is reported elsewhere in this issue. For those who take an interest in the legal problems of the profession it contains points of no small importance.

THE following prescription is recommended by a contemporary as a good anodyne in odontalgia:—Morphine acetate, $\frac{1}{2}$ -1 grain; oil of peppermint, 5 drops; phenol, 20 drops; collodion, one drachm. Apply with cotton.

SIR RICHARD WEBSTER, Q.C., M.P., Attorney-General, has accepted the office of a Vice-President to the Dental Hospital of London, Leicester Square.

MR. W. R. WOOD, Senr., L.D.S.Eng., for many years a member of the Brighton Town Council, has been elected an Alderman.

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our Correspondents.

Light for Dental Operations.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—I should be much obliged if some of your readers would give me the benefit of their experience as regards light for dental operations. It is generally conceded that that which comes from the north is the best, but it unfortunately happens that in many houses a suitable room with this aspect does not exist. What I wish to know is, what is the best position in which to place the operating chair? Should it be placed directly facing the window, or should it be placed sideways, so that the light comes from the left of the chair? Is one or the other position the best for all aspects, or is it an advantage to adjust the chair according to the aspect; or are both positions equally good as regards the preservation of the dentist's eyesight?

I am, yours faithfully,

VISION.

December 1st, 1889.

APPOINTMENTS.

ARTHUR BAINES, L.D.S., R.C.S.I., M.Q.S.Lond., of Hanley, has been appointed Honorary Dental Surgeon to the North Staffordshire Infirmary, Stoke-on-Trent, *vice* W. Bartlett, M.R.C.S.Eng. and L.D.S.Eng., resigned.

J. F. KEKWICK, L.D.S.I., has been appointed Honorary Dental Surgeon to the Cumberland Infirmary, Carlisle, *vice* Mr. Warwick Hele, L.D.S.Eng., resigned.

GEORGE H. ANDERSON has been appointed Honorary Dental Surgeon to the Eccles and District Medical Association.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Bedford Square, W.C.

Subscriptions to the Treasurer, 40, Leicester Square.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.





